STAND OF AMARILLO, INC.
DON MONIAK
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STAND of Amarillo, Inc.

August 12, 1998
STAND COMMENT # 1

Office of Fissile Materials Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Department of Energy, Office of Fissile Materials Management:

Attached are a series of comments submitted by STAND of Amarillo, Inc. pertaining to the *Surplus Plutonium Disposition Draft Environmental Impact Statement* (SPDEIS). These documents were referenced at the Amarillo, TX public hearing on August 11, 1998:

1. Comments on NEPA
2. Comments on locating plutonium processing at Pantex
3. Comments on immobilization and MOX
4. STAND of Amarillo Fact Sheet 98-04 with April 9, 1998 news release
5. News releases from August 6, 1998 and August 10, 1998
6. News article from August 11, 1998
7. Portions of the shredded Draft SPDEIS

These comments will be supplemented in the future.

Sincerely:

Don Moniak
Program Director
STAND of Amarillo, Inc.

cc: U.S. Secretary of Energy William Richardson
cc: State of Texas Governor George W. Bush, Jr.
cc: Congressman Mac Thornberry
cc: State of Texas Attorney General Daniel Morales
cc: Ms. Carol Borgstrom, Office of NEPA Policy and Assistance

(806) 358-2622 7105 W. 34th Ave. Suite E - Amarillo, TX 79109 FAX (806) 355-3837

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DON MONIAK
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The National Environmental Policy Act

The National Environmental Policy Act (NEPA) is our basic national charter for the protection of the environment. NEPA requires all Federal agencies to "utilize a systematic, interdisciplinary approach" in planning and decision making of any actions that may have an impact on the environment; insure that high quality "environmental information is available to public officials and citizens before decisions are made and before actions are taken"; and insure substantial and meaningful public involvement in the planning and decision process. 1

The Department of Energy's *Surplus Plutonium Disposition Draft Environmental Impact Statement* (Draft SPDEIS) is in clear violation of the letter and spirit of the National Environmental Policy Act. Following is a list of just a few of the clear violations of this important environmental law.

NEPA requires agencies to identify and analyze significant effects

DOE failed to identify and address beryllium air emissions in the Draft SPDEIS. The *Design-Only Conceptual Design Report for the Pit Disassembly and Conversion Facility* (Los Alamos National Laboratory, 1997) described the PDCF as a beryllium operation and addressed the possible need for an air permit. In its 1994 *Environmental Checklist for ARIES*, Los Alamos National Laboratory cited "expected emissions" of beryllium for a very small test project. 2

DOE failed to identify radioactive air emissions in the Draft SPDEIS. On page J-4 of the Draft SPDEIS DOE wrote that, "source term data for radiological releases, stack heights, and release locations are provided in the data reports for the pit conversion, immobilization, and MOX facilities." The data reports are not provided to the public, but are placed in reading rooms. n other words, the Draft SPDEIS does not provide any data on something as basic as expected quantities of radioactive air pollutants. 3

DOE did not analyze the impact of creating a new plutonium processing site (Pantex). DOE has identified this impact as significant in other NEPA documents. In its Programmatic Environmental Impact Statement for Stockpile Stewardship and Management, (1996), DOE wrote, ***"Plutonium would not be introduced into a site that does not have a plutonium infrastructure because of the high cost of new plutonium facilities and the complexity of introducing plutonium operations into sites without current capabilities."*** 4

NEPA requires agencies to evaluate all reasonable alternatives

DOE did not identify or evaluate the "metals-only option" for plutonium pit disassembly and conversion. The "metals only option was reported in the *Technical Risk Assessment for the Department of Energy Pit Disassembly and Conversion Facility Final Report* (Los Alamos National Laboratory, 1997) as the option with the least technical risk. 5

Compiled by STAND of Amarillo

FD175

FD175–1 General SPD EIS and NEPA Process

DOE has prepared this SPD EIS in accordance with the provisions of NEPA (42 U.S.C. 4321 et seq.) and the related CEQ and DOE implementation regulations (40 CFR 1500 through 1508 and 10 CFR 1021, respectively).

FD175–2 Air Quality and Noise

The 1994 analysis performed by LANL referred to the possibility of airborne releases of beryllium, a hazardous air pollutant, from pit disassembly and conversion. Subsequent analysis from LANL indicates that there would not be any airborne releases of beryllium (*Pit Disassembly and Conversion Facility, Environmental Impact Statement Data Report—Pantex Plant*, LA-UR-97-2909, June 1998). Because the beryllium is expected to remain in metal form at all times, the health hazards are minimized. The beryllium would be present in large pieces and cuttings created when the pit was bisected. These cuttings would be too large to become airborne. There would be no grinding; thus, there would not be any pieces of beryllium small enough to become airborne. Because the pieces and cuttings would be contaminated with trace levels of radioactive materials, they would primarily be disposed of as TRU waste and is included in the waste projections in this SPD EIS.

Section 2.4.1.1 was revised to discuss beryllium and its presence in the pit conversion facility.

FD175–3 Air Quality and Noise

Appendix G was revised to include the stack parameters for each of the proposed surplus plutonium disposition facilities, and Appendix J was revised to include their expected radiological release quantities.

FD175–4 DOE Policy

The *Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management* (SSM PEIS) (DOE/EIS-0236, September 1996) states that the pit fabrication mission would not be introduced into a site that does not have an existing plutonium infrastructure because of the high cost of new plutonium facilities and the complexity of introducing plutonium

operations into sites without current plutonium capabilities. The SSM PEIS states further that an important element of the site selection strategy is to maximize the use of existing infrastructure and facilities as the nuclear weapons complex becomes smaller and more efficient in the 21st century; thus, no new facilities were to be built to accommodate stockpile management missions. Accordingly, DOE considered as reasonable only those sites with existing infrastructure capable of supporting a pit fabrication mission. Although Pantex has the infrastructure to carry out its current weapons assembly and disassembly mission and nonintrusive pit reuse program, it was not considered a viable alternative for the pit fabrication mission because it did not possess sufficient capability and infrastructure to meet the SSM PEIS siting assumption stated above. Among the operations that were considered in developing siting alternatives for pit fabrication in the SSM PEIS were plutonium foundry and mechanical processes, including casting, shaping, machining, and bonding; a plutonium-processing capability for extracting and purifying plutonium to a reusable form either from pits or residues; and assembly operations involving seal welding and postassembly processing.

When comparing the site selection strategy for pit disassembly and conversion with that used for the pit fabrication mission, the siting criteria in the SSM PEIS have little or no bearing on siting criteria used in this SPD EIS. Pit disassembly and conversion do not require the foundry and mechanical processes discussed in the SSM PEIS and can be accomplished in a stand-alone facility. Also, the SSM PEIS siting assumptions include a requirement to use existing facilities, whereas ,the pit conversion facility would be a new structure no matter where it is located.

The analyses conducted for this SPD EIS indicate that potential environmental and human health impacts at Pantex would not be major. Results of the analysis are presented by alternative in Chapter 4 of Volume I. Detailed information on the potential impacts on human health at Pantex is presented in Appendix J.3. As shown in these sections, normal operation of the proposed facilities at Pantex would be well within limits prescribed by Federal, State, and local laws and regulations.

FD175–5 **Pit Disassembly and Conversion**

NEPA requires agencies to evaluate a range of reasonable alternatives. In the ROD for the *Storage and Disposition PEIS,* DOE identified two approaches for plutonium disposition: immobilization and conversion into MOX fuel for use in existing domestic, commercial reactors. Both approaches call for the use of plutonium dioxide as feed material. To become suitable feed material, the plutonium pits would have to be converted to oxide. Therefore, the metals-only option is beyond the scope of this SPD EIS; it was eliminated from consideration in the ROD for the *Storage and Disposition PEIS.*

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DON MONIAK
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DOE did not evaluate "plutonium polishing"---liquid acid plutonium polishing-- as a reasonable alternative for producing plutonium oxide powder suitable for Mixed Oxide (MOX) fuel use. DOE clearly considers liquid acid plutonium processing to be a reasonable alternative. In early June, DOE amended its *Request for Proposals for MOX Fuel Fabrication and Irradiation Services* to read: ***"The Offeror shall indicate whether or not its technical approach incorporates a plutonium oxide polishing step."*** 6

NEPA requires early implementation and public involvement

NEPA requires agencies to reduce delays and "integrate the NEPA process into early planning,." and DOE's policy is to "apply the NEPA review process early in the planning stages for DOE proposals." (10CFR1021.210.a)

DOE has excluded nuclear reactor communities from the public involvement process. DOE intends to burn Mixed Oxide (MOX) fuel in nuclear reactors but is allowing the nuclear industry to provide the site specific analysis for this proposed federal action. In the Draft SPDEIS, DOE has stated that, "*environmental impact analysis relating to specific reactors will be included in the SPD Final EIS,*" although these analyses are scheduled to be made by Consortiums in their proposals to fabricate and irradiate Mixed Oxide (MOX) fuel. No hearings have been held or are being planned in communities where utilities have expressed an interest in burning MOX fuel. 7

NEPA requires agencies meaningful and substantial public involvement

DOE did not adequately consider public input to the scope of the SPDEIS. During the 1997 Scoping for the Surplus Plutonium Disposition Environmental Impact Statement, hundreds of individuals and groups submitted comments to DOE to: 8

- Involve nuclear reactor communities in the NEPA process and do site-specific analysis of nuclear reactor sites; 7
- Provide environmental, safety and health information from the European mixed oxide (MOX) fuel industry; 8
- Fully analyze the differences between plutonium pit conversion for use in immobilization versus use in mixed oxide (MOX) fuel; 5
- Analyze "aqueous" plutonium processing as a reasonable alternative for plutonium pit conversion. 6
- Provide environmental impact data in the actual environmental impact statement, not in reference documents. 3

These scoping considerations were not undertaken by the Department of Energy. 8

The intent of NEPA is not bigger documents, it is better documents.

The Draft SPDEIS is 1300 pages long, yet it does not contain basic information, it does contain redundant and unnecessary paperwork, and it does not provide high quality information that is easily read by the general public. 9

FD175

FD175–6 Plutonium Polishing and Aqueous Processing

At the time DOE issued the SPD Draft EIS, it believed the gallium content in the plutonium dioxide feed specifications for MOX fuel could be reached using the dry, thermal gallium removal method included in the pit conversion process. However, in response to public interest on this topic and to ensure adequate NEPA review in the event that the gallium specification could not be met with the thermal process, an evaluation of the potential environmental impacts of including a small-scale aqueous process (referred to as plutonium polishing) as part of either the pit conversion or MOX facility was presented in Appendix N of the SPD Draft EIS. On the basis of public comments received on the SPD Draft EIS, and the analysis performed as part of the MOX procurement, DOE has included plutonium polishing as a component of the MOX facility to ensure adequate impurity removal from the plutonium dioxide. Appendix N was deleted from the SPD Final EIS, and the impacts discussed therein were added to the impacts sections presented for the MOX facility in Chapter 4 of Volume I. Section 2.18.3 was also revised to include the impacts associated with plutonium polishing.

FD175–7 General SPD EIS and NEPA Process

The SPD Final EIS was not issued until the proposed reactors had been identified and the public had an opportunity to comment on the reactor-specific information. As part of the procurement process, bidders were asked to provide environmental information to support their proposals. This information was analyzed in an Environmental Critique prepared for the DOE source selection board prior to award of the MOX fuel fabrication and irradiation services contract. DOE then prepared an Environmental Synopsis on the basis of the Environmental Critique, which was released to the public as Appendix P of the *Supplement to the SPD Draft EIS* in April 1999. This *Supplement* included a description of the affected environment around the three proposed reactor sites, and analyses of the potential environmental impacts of operating these reactors using MOX fuel (Sections 3.7 and 4.28 of this SPD EIS, respectively). During the 45-day period for public comment on the *Supplement*, DOE held a public hearing in Washington, D.C., on June 15, 1999, and invited comments. Responses to those comments are provided in Volume III, Chapter 4.

FD175–8 **General SPD EIS and NEPA Process**

DOE acknowledges the commentor's concerns regarding public involvement. As discussed in the response to FD175–7, nuclear reactor communities had the opportunity to comment. In the Environmental Critique and Environmental Synopsis, DOE used information that DCS provided on its European MOX fuel experience in evaluating changes required to the proposed MOX facility. The results of the critique were made available to the public in the Environmental Synopsis in accordance with 10 CFR 1021.216.

FD175–9 **General SPD EIS and NEPA Process**

DOE has worked carefully to keep the size of this SPD EIS to a minimum, and yet to make it sufficiently comprehensive to ensure that the decisionmaker and the public are well informed on the potential environmental impacts of siting the proposed surplus plutonium disposition facilities. However, the number and complexity of reasonable alternatives required to meet DOE's needs compel a very large document. DOE has also worked carefully to eliminate duplicate information. Nevertheless, a certain amount of repetition has been necessary to assist the reader—that is, to prevent the reader from having to move between various sections to exhaust the information on a particular topic. DOE has prepared a short summary of the SPD EIS and a guide on how to quickly locate specific information therein.

STAND OF AMARILLO, INC.
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U.S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, DC, 20026-3786

Dear Department of Energy, Office of Fissile Materials Disposition:

I do not support plutonium processing at the Pantex Plant. In the *Surplus Plutonium Disposition Draft Environmental Impact Statement*, the Department of Energy prudently decided against locating one plutonium processing facility (MOX fuel fabrication) at the Pantex Plant. For the following additional reasons, a Plutonium Pit Disassembly and Conversion facility also should not be located at Pantex:

Pantex Should Not Become the Next Rocky Flats

Pantex has never processed plutonium. The Pantex Superfund site has so far apparently escaped the type of radioactive contamination found at plutonium processing sites like Rocky Flats in Colorado and Hanford in Washington.

Risks That Are Unknown Are Too High

The Pantex Plant occupies an area that is a fraction of the size of other plutonium sites.

SIZE MATTERS: A Comparison of the Area of the Four Candidate Sites (Square Miles)			
Pantex	**Savannah River Site**	**Idaho National Engineering Lab.**	**Hanford**
23	**309**	**890**	**560**

10

The technologies proposed in the Plutonium Pit Disassembly and Conversion Facility are undemonstrated and unproven. It is unacceptable to have plutonium operations above the Ogallala Aquifer and only one mile from where people live and work in a vibrant agricultural producing area. The Pantex legacy already includes heavy contamination in a perched layer of groundwater less than one hundred feet above the Ogallala Aquifer. This pollution extends from under the Pantex Plant to adjacent private property and the real impacts remain unknown. The risk of any additional groundwater pollution is unacceptable in an agricultural region.

Common sense dictates that negative consequences to people and farmland from nuclear accidents are far more likely in a small, open, windy location like Pantex. The Department of Energy has acknowledged that the most visually unappealing feature of the plutonium facilities will be their smokestacks. Visual blight will be a minor inconvenience compared to the air pollutants--many of them radioactive--expected to escape into the atmosphere daily through smokestack filters. Routine air emissions of tritium, plutonium, americium, and beryllium constitute unacceptable new hazards to the Texas Panhandle.

FD175

FD175–10 **Alternatives**

This comment is addressed in responses to the campaign, *Letter Expressing Reasons for Not Supporting Plutonium Processing at the Pantex Plant.*

There is Valid, Strong Criticism of Safety in the Storage of Plutonium at Pantex

Since Pantex became the nation's long-term storage location for up to 20,000 plutonium pits, promises to improve safety conditions have not happened. The U.S. Government Accounting Office and the Defense Nuclear Facilities Safety Board have issued reports critical of plutonium storage safety at Pantex. Fifty million taxpayer dollars were spent on a failed plutonium pit container program (the AT-400A) and the plan to move over 10,000 pits into a safer remodeled building (Building 12-66) has also failed.

When it comes to plutonium pit storage problems, Panhandle residents are back to square one. The plutonium remains in old, unsuitable, corroding storage containers and in 35-55 year old "bunkers" that the Department of Energy promised were for "temporary" use. Plutonium that is supposed to be stored in a stable environment now sits in the bunkers--all but three without air conditioning--even as the Texas Panhandle experiences a spell of more than 40 consecutive days of 90+ degree temperatures, and more than 20 days this summer with thermometers registering 100+ degrees. If the Department of Energy cannot accomplish the job of safely storing Pantex plutonium in the most stable environment, there is no reason to accept its unsubstantiated assurances to safely process deadly plutonium powders at Pantex. 10

Thank you for this opportunity to comment.

Sincerely:

FD175

STAND OF AMARILLO, INC.
DON MONIAK
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U.S. Department of Energy
Office of Fissile Materials Disposition
P.O. Box 23786
Washington, DC, 20026-3786

Dear Department of Energy, Office of Fissile Materials Disposition:

In the *Surplus Plutonium Disposition Draft Environmental Impact Statement*, the Department of Energy proposes to build new plutonium processing facilities and dispose of 55 tons of "surplus" plutonium. I ask that the following comments reflecting my concerns and reservations regarding these proposals be incorporated into the decisions made for the plutonium disposition program.

Immobilize

The objective of plutonium disposition is to make weapons-usable plutonium as inaccessible for reuse in nuclear weapons as the plutonium in irradiated nuclear fuel, and to do so in a timely and safe manner. For the following reasons the Department of Energy should choose to immobilize all surplus plutonium and consider the possibility of doing this at more than one location:

- Immobilizing all plutonium is a safer option because it involves less handling, processing, and transporting of plutonium and other radioactive materials, and is less expensive because it involves fewer new facilities and avoids the costs of subsidizing the nuclear industry. These same factors would allow disposition to occur in a much more timely manner;
- According to the Department of Energy's own studies, the "ceramification can-in-canister" approach to immobilization results in a waste product that is more resistant to theft, diversion, and reuse than irradiated mixed oxide (MOX) fuel;
- The immobilization approach does not involve increasing the risk to persons living near nuclear reactors because it avoids burning–for the first time ever--large amounts of weapons-grade plutonium. 11

If delays arise in the immobilization program, the Department of Energy should insure that:

- ns of presently unstable plutonium oxide scheduled for immobilization are put in a safer, more stable form suitable for storage, inventory, and international inspection;
- The objective of interim demilitarization of currently stable forms of plutonium, such as plutonium in pits, must be the minimal alteration of its current form necessary for safe storage, inventory, and international inspection.

No To MOX

The ill-conceived mixed oxide (MOX) fuel option should be rejected because there is no rational justification to convert stable plutonium to less stable, more dangerous plutonium oxide powder for use in MOX fuel, and then subsidize the nuclear industry to irradiate the fuel in aging nuclear reactors. Now that it appears obvious that producing plutonium oxide powder suitable for use in MOX fuel will require liquid acid plutonium processing, the MOX option is a proven threat to human health and the environment.

The United States' rationale that it must choose the MOX option to appease Russia is unsubstantiated and flawed in several respects:

- There is little support for a plutonium fuel economy in Russia, where people voting in public referendums have overwhelmingly rejected new nuclear developments;

FD175

FD175–11 **Alternatives**

This comment is addressed in responses to the campaign, *Letter Expressing Support for Immobilizing All Surplus Plutonium and Rejection of the Mixed Oxide Fuel Option.*

- **The argument** that the Russian government opposes immobilization because the plutonium is more easily retrieved is undermined by the fact that irradiated MOX fuel is easier to re-use in nuclear weapons than the ceramification can-in-canister disposition approach;

- The United States should not be encouraging Russia to develop MOX capability due to the uncertainties produced by the U.S. underwriting costs of a Russian infrastructure to reprocess plutonium;

- Russia's choice of technology should not determine the U.S. choice. The governments themselves have recognized this, as in the United States-Russian Joint Plutonium Disposition study in 1996, which found that, "*The United States and Russia need not use the same plutonium disposition technology. Indeed, given the very different economic circumstances, nuclear infrastructures, and fuel cycle policies in the two countries, it is likely that the best approaches will be different in the two countries.*"

Already, politically powerful voices are suggesting that United States policy regarding plutonium be re-examined. By establishing a new level of plutonium processing infrastructure which encourages plutonium commerce, U.S. non-proliferation policy is clearly undermined.

Inform People of the Real Hazards, Risks, and Uncertainties

The Department of Energy has not fulfilled its legal obligation to fully inform people of the real risks, hazards, uncertainties and long-term implications of processing tons of plutonium powder that is hazardous to human health at the scale of micrograms. This latest voluminous, and largely unreadable, environmental document does not even contain the most basic information about hazards, such as the expected quantities of radioactive air pollutants. Instead, the public is forced to follow a paper maze if the information is available at all. 11

The Department of Energy must admit that the real hazards and risks are largely unknown, and that uncertainty is the only constant at this time. There is only one mixed oxide (MOX) fuel plant currently operating at the capacity proposed by this document--100 tons of MOX fuel fabricated per year--and that facility uses reactor-grade plutonium. No MOX fuel from weapons-grade plutonium has ever been fabricated or used on an industrial scale, and no weapons-grade plutonium has ever been immobilized on an industrial scale. The plutonium pit disassembly and conversion plant would be a first-of-its-kind facility utilizing unproven technologies that are controversial even within the nuclear establishment.

To compound the uncertainties, the Department of Energy plutonium disposition plan is not a model for success. Under the existing proposals, the Department of Energy would design facilities requiring unproven technologies while the technology demonstration and testing is ongoing, and begin facility construction before finishing their design. The Department of Energy has followed this model of development before and the result has always been cost overruns, delays, unexpected negative impacts on human health and the environment, and massive waste of taxpayer dollars.

Thank you for this opportunity to comment.

Sincerely:

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DON MONIAK
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STAND of Amarillo, Inc.

FOR IMMEDIATE RELEASE: APRIL 9, 1998

NEWS RELEASE******NEWS RELEASE**

NRC SCRUTINIZES MOX PROGRAM

"SHIFTING SOIL" AND CONFUSION CHARACTERIZE DOE EFFORTS

The Nuclear Regulatory Commission (NRC) issued several stern warnings to the Department of Energy (DOE) during an April 3, 1998 public meeting in which DOE briefed the commission on its Mixed Oxide (MOX) fuel program. NRC Chairperson Shirley Jackson admonished DOE, "Stability at the highest policy levels within DOE...is something that we absolutely must have." Jackson's remarks finalized the briefing that yielded repeated indications that DOE's MOX program appears to lack integrated and coherent leadership or strategy.

Director of DOE's Office of Fissile Materials Disposition, Howard Canter, indicated the regulatory framework is poorly defined. Jackson replied at one point that "the soil seems to be shifting...and so the real question that naturally occurs is how firm is DOE with the strategies and plans that you have presented today?"

Pantex is one of four candidate sites for plutonium processing operations, and its supporters have used NRC regulation as a selling point in trying to minimize the dangers associated with these new missions at the plant. Serious concerns for the Panhandle arise since this regulation doesn't currently exist and proposals are neither clear nor defined at this point.

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The fact is that DOE remains self-regulated in their handling of plutonium. "Our experience is that DOE does whatever it wants to do, and public input is just a charade. I'm not sure they will ever be willing to heed any advice from the Nuclear Regulatory Commission either," according to Trish Neusch, Operations Director for STAND of Amarillo, whose family lives and farms less than 2 miles from the proposed plutonium processing facility.

Don Moniak, Program Director for STAND of Amarillo, adds, "While it is encouraging to see the NRC put the plutonium disposition program under such heavy scrutiny, we hope Congress and the Texas delegation begin to take notice and slash MOX funding accordingly. DOE needs better leadership and a sense of direction before they waste any more taxpayer dollars."

The April 3, 1998 NRC meeting transcript is available in its entirety on the World Wide Web at:

http://www.nrc.gov/NRC/COMMISSION/TRANSCRIPTS/19980403a.html

For More Information Contact:

Don Moniak, STAND of Amarillo, Inc. 806-358-2622

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FD175

FD175–12 **General SPD EIS and NEPA Process**

DOE acknowledges the attached news releases, fact sheet, and newspaper article.

POSITIONS AND STATEMENTS
PLUTONIUM PROCESSING AND MIXED OXIDE (MOX) FUEL

"We oppose the processing, reprocessing and the production of mixed oxide fuel (MOX) in areas where there is possibility or risk of pollution and contamination of agricultural land, air, and groundwater."

State Policies of the Texas Farm Bureau. 1998. Pages 36-37, Section 137, Lines 24-28

American Farm Bureau Federation Policies for 1998, Page 112, Section 121, Lines 38-41

"The Party recognizes the value of alternative energy and supports continued private research and development of such sources, but we oppose the federal government using hazardous waste as an alternative energy source, such as the processing and/or reprocessing of plutonium and uranium for making Mixed Oxide fuel in agricultural areas and above major water sources."

Texas Republican State Party 1998 Platform for "Alternative Energy Sources"

"Since the manufacture of nuclear reactor fuel rods has usually led to environmental contamination of land, air, and water, and since the Pantex Plant near Amarillo, Texas is located over the Ogallala Aquifer, the country's largest aquifer, and in the midst of one of the country's largest grain-and-cattle-producing regions, the Democratic Party of Texas opposes the U.S. Department of Energy plan to produce Mixed Oxide (MOX) fuel from plutonium and uranium at the Pantex Plant, or any other form of plutonium processing."

Texas Democratic State Party 1998 Platform

"A consortium has been formed between Bechtel, BNFL International, and Westinghouse. GE chose not to participate. GE will not receive, store, process, transport, or take title to any material in any stage of the MOX process. I think you have other people to deal with on this one and not GE. Thank you very much."

Statement by General Electric Corporation Chairman of the Board Robert Welch at annual General Electric shareholders meeting, April 1998

STAND of Amarillo, Inc. Fact Sheet #98-4
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STAND of Amarillo, Inc.

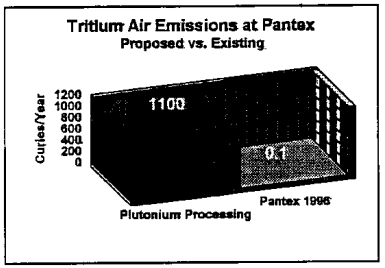
FOR IMMEDIATE RELEASE: August 5, 1998

NEWS RELEASE*******NEWS RELEASE**

TRITIUM EMISSIONS WOULD JUMP 10,000 TIMES WITH PLUTONIUM PROCESSING AT PANTEX

According to a Department of Energy document, high levels of routine air emissions of gaseous, radioactive tritium would characterize operations at a Plutonium Pit Disassembly and Conversion Facility (PDCF) Los Alamos National Laboratory scientists estimated that 1,100 curies a year of gaseous tritium would be released through a smokestack about 115 feet high. The source of the tritium would be the "disassembly and conversion of pits containing tritium"[1] in the "Special Recovery Line," an additional process that was not previously reported.

Pantex and the Savannah River Site plant in South Carolina are "equally preferred" candidate sites for locating the Plutonium pit processing facility–a first-of-its-kind plutonium processing plant that would utilize unproven technologies: If located at Pantex, the PDCF would emit 10,000 times more hazardous, radioactive tritium gas than are presently released under routine existing Pantex operations (0.1 curies/year in 1995 and 1996).



Panhandle Area Neighbors And Landowners (PANAL) member Jeri Osborne stated. "that is a lot of radioactive air pollution considering the winds we have around here. There are several of us living and farming along this north-northwest Pantex boundary, including a bunch of children. We've said all along that plutonium processing is a threat to human health and area agriculture, and this just confirms our position yet again."

"The Department of Energy brags about the number of jobs a plutonium plant might create but chooses to hide the severe health hazards plutonium operations would create," added Don Moniak from Serious Texans Against Nuclear Dumping.

For More Information Contact
Don Moniak, 806-358-2622

[1] Pit Disassembly and Conversion Facility, Environmental Impact Statement Data Report–Pantex Site, LA-UR-97-2909. Page 68.

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SAVE TEXAS AGRICULTURE AND RESOURCES
7105 W. 34th Street
Amarillo, Texas 79109
(806) 358-2622

FOR IMMEDIATE RELEASE: August 10, 1998
ATTENTION: ASSIGNMENT EDITORS
MEDIA ADVISORY ******MEDIA ADVISORY
Media Conference
Courtyard Area of the Radisson Inn, I-40 and Lakeside
Amarillo, Texas
2 P.M., Monday, August 10

LOCAL GROUPS TO SHRED DEPARTMENT OF ENERGY'S ENVIRONMENTAL IMPACT STATEMENT

Local Panhandle area citizens and grassroots organizations will meet with the media to discuss their grave concerns with the Department of Energy's proposals to begin processing plutonium at the Pantex Plant. A public hearing being held in Amarillo on Tuesday, August 11th is an important opportunity for Texas Panhandle residents to remind the government that the lure of a few hundred jobs is not worth becoming the next Rocky Flats. A copy of the *Surplus Plutonium Disposition Draft Environmental Impact Statement* will be sent through a shredder to send the Department of Energy the message that the document is in clear violation of the National Environmental Policy Act. Some of the clear violations include:

- **Failure to evaluate all reasonable plutonium processing alternatives;**
- **Omission of environmental impacts such as radioactive air emissions;**
- **Exclusion of nuclear reactor communities from the public involvement process;**
- **A claim that repackaging plutonium pits at Pantex into shipping containers would add $70,000,000 in operating costs to a plutonium pit disassembly and conversion facility at a site other than Pantex.**

"We are greatly disturbed that the government chose not to tell people how much radioactive debris will be deposited on our agricultural land and its products," said Doris Smith of Panhandle Area Neighbors and Landowners (PANAL).

"Pantex is a site with no plutonium processing experience and compared to other DOE sites it is clean of radioactive contamination. Yet these considerations remain absent in the analysis," said Mavis Belisle of the Peace Farm.

"The Department of Energy already said it would repackage plutonium pits in new storage and shipping containers as part of its storage program. The failure to implement a promised safety improvement program should not function as a criteria for locating a more dangerous operation at Pantex." said Don Moniak from Serious Texans Against Nuclear Dumping (STAND).

CONTACTS: Don Moniak 806-358-2622 Mavis Belisle 806-335-1715 Doris Smith 806-335-1050

STAND of Amarillo ◦ PANAL ◦ the Peace Farm ◦ POWER of Hereford ◦ Texas Nuclear Waste Task Force

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Amarillo Daily News Tuesday, August 11, 1998 9A

STAND: Report omits data

By GREG ROHLOFF
Globe-News Business Writer

Opponents of a possible plutonium pit disassembly plant at Pantex said Monday that the Department of Energy failed to include all the pertinent information in its draft environmental impact statement.

The DOE will conduct hearings from 1 to 4 p.m. and 6 to 9 p.m. today at the Radisson Inn, Interstate 40 and Lakeside, on the possible location of a pit disassembly plant. Additionally, the DOE will collect written comments on the proposal through Sept. 16.

U.S. Rep. Mac Thornberry, R-Clarendon, will testify on why he believes Pantex is the best choice for the plant. Thornberry is a member of the House National Security Committee, which oversees Pantex and the nation's nuclear weapons complex.

Pantex is one of two preferred sites, according to DOE documents. The other is the Savannah River Site in western South Carolina.

Don Moniak, executive director of Serious Texans Against Nuclear Dumping, said the DOE's environmental impact statement downplays the potential radiation exposure.

Radiation exposure is measured in standard units called rems; DOE regulations allow up to 5 rems yearly, according to Andre Cygelman, director of material and immobilization of the office of fissile materials disposition for DOE.

The document states an average yearly exposure of about 500 millirems; a millirem is one-thousandth of a rem.

Moniak said Pantex's current level of allowable radiation exposure is 800 millirems.

A report analyzing the staffing needs of a pit disassembly plant prepared by Los Alamos National Laboratory estimates that some workers on the operating floor could be exposed to as much as 1 rem. The average for all floor workers is 810 millirems.

Moniak said the DOE environmental impact statement writers apparently arrived at the 500 millirems figure by including managers and clerical workers who would not be in contact with the pits.

Cygelman and Bert Stevenson, director of outreach for the office of fissile materials disposition, said they had no knowledge of the source of the higher figures quoted by Moniak.

Cygelman said the 500 millirems was a goal for a disassembly plant.

Doris Smith of the Panhandle Area Neighbors and Landowners, another group opposed to expanding Pantex's mission, said the draft document understates the potential exposure to tritium, a toxic liquid that has reached a perched aquifer above the Ogallala aquifer, a principle source of water for the region.

She cited a June 1 report on the Pit Disassembly and Conversion Facility that 1,100 curies of tritium would be released into the atmosphere.

Cygelman insisted that the figures in the draft environmental impact statement were accurate, and that workers would face little exposure to tritium while handling the plutonium pits in glove boxes.

Mavis Belisle of the Peace Farm questioned the accuracy of figures listed for beryllium, noting that the Oak Ridge, Tenn., plant has had environmental problems because of beryllium.

Cygelman and Stevenson said they were uncertain of the analysis of beryllium exposure.

Moniak, Smith and Belisle shredded a copy of the statement, reducing it to a pile of paper strips.

"We do not believe it is legally valid or scientifically valid at this time," Moniak said.

Moniak called for a new statement that would be shorter and more concise than the current document's 1,300 pages.

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STAND OF AMARILLO, INC.
DON MONIAK
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STAND of Amarillo, Inc.

August 24, 1998
STAND COMMENT # 2
Surplus Plutonium Disposition Draft Environmental Impact Statement
(Draft SPDEIS)

Office of Fissile Materials Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Department of Energy, Office of Fissile Materials Management:

RE: *ARIES Source Term Fact Sheet* (LALP-97-24, Rev. 3, April 24, 1998).

On page 3, paragraph two, tne report states that, "A significant number of pits processed by the ARIES facility will contain tritium. None of these pits were selected as part of the ARIES pilot demonstration because of the difficulties associated with handling tritium."

- Does the Department of Energy know how many pits contain tritium?
- Exactly what exact difficulties are associated with handling tritium, why are these difficulties not reported in the Draft SPDEIS, and will DOE detail these difficulties in the Final SPDEIS?
- What would be the consequences if pits containing tritium were sent through the proposed plutonium pyroprocessing modules?
- Is DOE considering processing pits with tritium at an even or uneven rate?

1

On page 3, paragraph two, the report also states that, "Decisions regarding the presence of tritium will be made before processing pits in the ARIES facility. These decisions may be based upon prior knowledge or upon a sampling strategy for detecting tritium. A strategy for detecting tritium in pits was devised while planning for the reconfiguration of the nuclear stockpile complex."

- When will DOE make these decisions regarding the presence of tritium?
- Where in the Draft SPDEIS is there an analysis and/or reporting of the requirements for detecting tritium?
- Was the tritium detection strategy ever reported in a public document? Was this strategy ever implemented?
- What is the risk of not detecting tritium in a pit that does contain tritium?

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FD145

FD145–1 **Pit Disassembly and Conversion**

Section 2.4.1.2 was revised to expand the discussion of tritium and operation of the Special Recovery Line. DOE knows how many pits contain tritium. The actual number and types of pits containing tritium are classified. Pits with tritium would be handled in the Special Recovery Line. Tritium is removed from the pit and either captured for use or oxidized to tritiated water and captured for disposal as LLW. The tritium included in the waste estimates and emissions were bounded and analyzed in this SPD EIS. The presence of tritium would be confirmed when the pit is unpacked from the shipping container and would also be obvious when the pit is bisected. Tritium would be separated from the pit components in the Special Recovery Line, and all parts would be surveyed for tritium before being moved for further processing. These steps would reduce the probability of pyroprocessing of plutonium contaminated with tritium to a level that is not considered credible. However, if it were to happen the tritium would be volatilized and escape through the facility's ventilation system since HEPA filters cannot capture tritium. The resulting tritium release to the atmosphere would be of smaller consequence than the design-basis accident already presented in this SPD EIS for a tritium release at the pit conversion facility during a glovebox fire because this accident includes tritium contaminated parts from multiple pits being affected. The processing schedule for specific pits has not been finalized. The tritium at risk in the SPD EIS accident analysis and the tritium emissions to the atmosphere are conservative estimates that bound the potential environmental impacts of pit disassembly and conversion operations.

FD145–2 **Pit Disassembly and Conversion**

Section 2.4.1.2 was revised to include a description of the processes of verifying the contents of pit shipments and the requirement to survey incoming pits for tritium contamination. The method for determining the types of pits that are contaminated with tritium is classified.

The remainder of this comment is addressed in response FD145–1.

STAND OF AMARILLO, INC.
DON MONIAK
PAGE 2 OF 6

On page 3, paragraph one, the report states, "Because of their construction, some pit types will require capabilities in addition to those tested in the ARIES pilot demonstration. Number and types of pits to be processed in a facility may not be defined until the final implementation of weapons reduction treaties." 3

- Are there any other pit types besides those containing tritium that require extra capabilities?
- Is DOE considering all potential pit types in the PDCF?

On page 2 in the fourth paragraph, the report states that the initial demonstration project involved only seven pit types that "were generally representative of the larger stockpile and relatively straightforward in their construction so there would be no special complications in the ARIES pilot demonstration." 4

- What special complications are anticipated in the larger-scale plutonium pit disassembly and conversion demonstration and full scale facility?
- Where are these special complications reported to the public in the Draft SPDEIS? Will DOE report these special complications in the Final SPDEIS?
- Are the original seven pit types selected for the demonstration "bonded" pits?

On page two of the report is a table showing the potential impurities in the plutonium in plutonium pits. 5

- Where was this list of impurities reported in the Draft SPDEIS?
- In what end product will these impurities appear? DOE should give a detailed description of whether the impurities will become part of the air pollutant stream, the mixed-waste stream, or the
- If the impurities are converted to air pollutants, who will regulate these air emissions?

STAND of Amarillo believes the *ARIES Source Term Fact Sheet* should be added as an Appendix to the Final SPDIES, and is attaching a copy for inclusion.

These comments will be supplemented in the future.

Sincerely:

Don Moniak
Program Director
STAND of Amarillo, Inc.

FD145

FD145–3 **Pit Disassembly and Conversion**

Some pit types have unique features beyond those issues associated with the presence of tritium that may require special handling tools, cutting tools, or procedures. DOE is considering all potential pit types in the pit conversion facility and would actually disassemble up to 250 representative pits during the pit disassembly and conversion demonstration currently being conducted at LANL.

FD145–4 **Pit Disassembly and Conversion**

The pit disassembly and conversion demonstration was expanded to include all pit types in order to avoid potential special complications in a full-scale pit conversion facility. Specifics of the special complications related to the disassembly of some pits discussed in the LANL fact sheet are classified. The environmental impacts resulting from the disassembly of all of the pit types that could be dispositioned through the pit conversion facility were addressed in the analysis presented in Chapter 4 of Volume I. The original seven pit types selected for the demonstration were bonded pits.

FD145–5 **Pit Disassembly and Conversion**

Information presented in the ARIES fact sheet referred to by the commentor was considered in this SPD EIS. Section 2.4.1 was revised to acknowledge the presence of potential impurities in the pits to be dismantled. Appendix H was revised to discuss the inclusion of these impurities in the LLW and TRU waste streams. All gaseous effluent streams coming from the facility would be thoroughly scrubbed or filtered to reduce the amount of undesirable particulates and pollutants. Air leaving gloveboxes in the process line would be filtered through three stages of HEPA filters. By the time any of the impurities joined the facility's exhaust stream, they would likely be in the subparts-per-billion range. Any impurities that were converted to air pollutants would be subject to Federal, State, and local air quality regulations. Some impurities may remain with the plutonium which would be passed through the plutonium-polishing process in the MOX facility as described in the revised Section 2.4.3. In instances of the material being sent directly to the immobilization facility, as in Alternatives 11 and 12, the plutonium could be fed directly into the process. The ARIES demonstration project was analyzed in the *Pit Disassembly and Conversion Demonstration EA* (DOE/EA-1207, August 1998), which is available on the MD Web site at http://www.doe-md.com.

ARIES Source Term

Description

At the end of the Cold War, the United States maintained a large, diverse stockpile of more than 20,000 nuclear weapons (Stockpile Management Preferred Alternatives Report, February 1996). In 1995, the Department of Defense published the Nuclear Posture Review (NPR, 1995), the results of a 10-month comprehensive review to determine the role of nuclear weapons in US security. The report recognized that the security environment had changed dramatically since the end of the Cold War and recommended large reductions in the nuclear weapons stockpile. However, it also recognized the current instability and uncertainty in countries that still control a nuclear arsenal and recommended maintaining a much smaller, enduring nuclear stockpile in the eventuality of disruptions in relationships with these countries. The recommended size of the enduring stockpile was assumed to be 3,500 nuclear warheads, the number permitted after achieving full reductions called for in the ratified Strategic Arms Reduction Treaty (START) I and in the currently unratified START II. Thus, in the foreseeable future, more than 16,500 nuclear weapons could be dismantled in the United States.

A portion of these excess weapons have already been removed from the active stockpile. Plutonium from the pits of these decommissioned nuclear weapons is part of the 38.2 metric tons of weapons-usable plutonium declared excess to national security needs as part of the Department of Energy (DOE) Openness Initiative (Openness Press Conference Fact Sheet, February 6, 1996). The disposition of excess plutonium from the pits of dismantled weapons, the retirement stockpile, is the responsibility of the Department of Energy Office of Fissile Material Disposition (DOE-MD). To comply with Presidential Directive (Clinton, September 23, 1993), plutonium must be extracted from pits by the Advanced Recovery Integrated Extraction System (ARIES) or some other process to make it available for international accountability without transferring weapons design information.

The strategic reserve contains nuclear weapons that have not been retired but are not part of the enduring stockpile. As weapon dismantlement and other programs continue to be reviewed, plutonium in some of the weapons from the strategic reserve may also be declared excess to national security needs and offered for international inspection. These pits will also require processing by ARIES, or a process with similar capabilities.

The total number of pits, and the corresponding quantities of plutonium in weapons in the retirement stockpile, the strategic reserve, and the enduring stockpile may be found in the classified report "Selection of Pits for Integrated Demonstration of ARIES," (Brough et. al., 1996).

Preliminary schedules for surplus weapons-usable plutonium disposition estimate 10 years of operation for the pit conversion process (DOE-MD-003, July 17, 1996).

FD145

STAND OF AMARILLO, INC.
DON MONIAK
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Description cont.

There are roughly 40 different pit types. Pits can be generically characterized as nested shells of materials in different configurations and constructed by different methods. Elements of construction that may be found in pits processed by ARIES include the following: vanadium, erbium, titanium, chromium, boron (enriched in ^{10}B), aluminum, stainless steel, tritium (^{3}H), beryllium, plutonium, uranium (^{235}U enriched and depleted), and gallium. Maximum concentrations of impurities in plutonium are as follows.

Element	Concentration (PPM)	Element	Concentration (PPM)
Aluminum	*	Nickel	**
Americium	200	Neptunium	100
Boron	50	Lead	100
Beryllium	3	Silicon	*
Carbon	200	Tin	100
Calcium	500	Tantalum	100
Cadmium	10	Thorium	100
Chromium	100	Titanium	100
Copper	100	Uranium	100
Iron	**	Tungsten	200
Gallium	*	Zinc	100
Magnesium	500	Tritium	10 mCi/kg
Manganese	100		

*For Ga, Al, and Si, the limit is 4 (ppm Ga) +10 (ppm Al) + 10 (ppm Si) < 1300 ppm.
**Fe + Ni < 400 ppm

Relation to the Study

Detailed knowledge of the rate of throughput and the physical and chemical nature of the pits are required to do detailed design work on an ARIES facility.

Status

The ARIES pilot demonstration will process 50 pits consisting of seven design types. This selection was made entirely from pit types currently in the retirement stockpile. Selection criteria were established to select types that were generally representative of the larger stockpile and relatively straightforward in their construction so there would be no special complications in the ARIES pilot demonstration (Brough et al., 1996).

The report by Brough et al., 1996, includes a generalized summation and categorization of all the pit types in the nuclear stockpile. There are however, detailed descriptions only for the seven types that will be processed in the ARIES pilot demonstration.

FD145

Issues

A facility will be required to process all pit types declared excess to national defense needs. A classified report similar to the one by Brough et al., 1996, containing information about all pit types to be processed will be required. Because of their construction, some pit types will require capabilities in addition to those tested in the ARIES pilot demonstration. Number and types of pits to be processed in a facility may not be defined until the final implementation of weapons reduction treaties.

A significant number of pits processed by the ARIES facility will contain tritium. None of these pits were selected as part of the ARIES pilot demonstration because of the difficulties associated with handling tritium. Decisions regarding the presence of tritium will be made before processing pits in the ARIES facility. These decisions may be based upon prior knowledge or upon a sampling strategy for detecting tritium. A strategy for detecting tritium in pits was devised while planning for the reconfiguration of the nuclear stockpile complex. Tritium-containing pits will be sent to a special tritium recovery module. Processes for disassembling tritium-bearing pits are being developed at Los Alamos. When development is completed, these processes must be included in the ARIES facility design and construction.

Options

Before final decisions are made regarding the number and type of pits to be converted, working assumptions can be constrained on the low side by the requirements to process the current retirement stockpile. On the high side, system requirements can be defined by all pits that will not be part of the enduring stockpile.

Implementation

Space and equipment needs for the ARIES facility will be defined by the number and types of pits that will be processed and by the period of time allocated to process them.

References

Department of Energy, "Stockpile Management Preferred Alternatives Report, in Support of the Stockpile Stewardship and Management Programmatic Environmental Impact Statement," draft (February 1996).

Department of Defense, "Nuclear Posture Review," in the Annual Defense Report, ISBN 0-16-048573-8 (1995).

Department of Energy Office of Congressional, Public, and Intergovernmental Affairs Openness Press Conference Fact Sheets, "Department of Energy Declassifies Location and Forms of Weapons-Grade Plutonium and Highly Enriched Uranium Inventory Excess To National Security Needs" (February 6, 1996).

President Bill Clinton, "US Nonproliferation and Export Control Policy," Presidential Decision Directive-13 (September 23, 1993).

Winslow S. Brough, Dewey S. Ravenscroft, and Wendel Brown, "Selection of Pits for Integrated Demonstration of ARIES," Los Alamos National Laboratory report CLY96-0010 (1996).

FD145

STAND OF AMARILLO, INC.
DON MONIAK
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References cont. Department of Energy Office of Fissile Materials Disposition, "Technical Summary Report for Surplus Weapons-Usable Plutonium Disposition," DOE-MD-003, Rev. 0 (July 17, 1996) Figures 5-1–5-7.

FD145

STAND OF AMARILLO, INC.
DON MONIAK
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STAND of A narillo, Inc.

August ,4, 1998
STAND COMMENT # 3
Surplus Plutonium Disposition Draft Environmental Impact Statement
(Draft SPDEIS)

Office of Fissile Materials Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Department of Energy, Office of Fissile Materials Management:

RE: Plutonium Pit Disassembly and Conversion and Beryllium-Clad Plutonium Pits

On page 2-14 of the Draft SPDEIS is a "depiction" of a plutonium pit (Figure 2-6) that illustrates a pit with a stainless steel case. In the November, 1997 Defense Nuclear Facilities Safety Board (DNFSB) Technical Report 18: *Review of the Safety of Storing Plutonium Pits at Pantex*, there are frequent references to "beryllium-clad" plutonium pits.

- Why are plutonium pits not depicted with beryllium cladding?
- In the Final SPD-EIS, DOE should define the differences in processes, waste streams, and health hazards expected from processing beryllium-clad pits versus stainless-steel-clad pits. 1
- Since beryllium clad pits are more susceptible to corrosion from chlorine and moisture, what measures will be taken to insure these pits are intact upon arrival at the PDCF?

Also on page 2-14, it states that gallium is "alloyed" with plutonium in pits and must be removed if the PDCF product is plutonium powder for use in MOX fuel.

- Does the gallium have to be removed if the PDCF product is plutonium powder for use in the immobilization facility? 2
- What other impurities that are listed on page 2 of the ARIES fact sheet are "alloyed" with plutonium and are a concern for either disposition option?

These comments will be supplemented in the future.

Sincerely:

Don Moniak
Program Director
STAND of Amarillo, Inc.

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FD146

FD146–1 Alternatives

Section 2.4.1 was revised to include a discussion of beryllium as a potential impurity, as well as the reasons why beryllium processing would not be an issue at the pit conversion facility. Figure 2.6 was revised to change the term "stainless steel case" to "outer case"; it is not meant to portray all the variations in pit design and construction. Irrespective of the cladding material, the process would be the same for dismantling and converting all pits. As discussed in Section 2.4.1.2, the main criterion in determining how the pits would be dismantled depends on the presence of tritium, not beryllium. Because the beryllium is expected to remain in metal form at all times, the health hazards are minimized. The beryllium would be present in large pieces and cuttings created when the pit was bisected. These cuttings would be too large to become airborne. There would be no grinding; thus, there would not be any pieces of beryllium small enough to become airborne. Because the pieces and cuttings would be contaminated with trace levels of radioactive materials, they would primarily be disposed of as TRU waste and is included in the waste projections in this SPD EIS.

FD146–2 Plutonium Polishing and Aqueous Processing

Gallium and other impurities would not have to be removed if the plutonium dioxide from the pit conversion facility were to be used in the immobilization facility. Technically, the term "alloyed" refers to materials purposely added to metals to cause a change in physical characteristics. From this point of view, the elements other than gallium in the referenced table are deemed impurities. The levels given in the table are maximums; actual levels are being established based on review of archival data and sampling and analysis associated with ongoing R&D efforts. DOE has included plutonium polishing as a component of the MOX facility to ensure adequate gallium and impurity removal from the plutonium dioxide. Section 2.4.3 and the hybrid alternatives analyses in Chapter 4 of Volume I were revised to include a discussion of plutonium polishing.

Section 2.4.1 was revised to acknowledge the presence of potential impurities in the pits to be dismantled.

STAND OF AMARILLO, INC.
DON MONIAK
PAGE 1 OF 2

STAND of Amarillo, Inc.

September 15, 1998

STAND COMMENT # 4
Surplus Plutonium Disposition Draft Environmental Impact Statement (Draft SPDEIS)
Re: Plutonium Pit Disassembly and Conversion Demonstration Project

Office of Fissile Materials Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Department of Energy, Office of Fissile Materials Management:

There are conflicting objectives being reported for the plutonium pit disassembly and conversion demonstration project. On the one hand, the demonstration project research and development contractors at Los Alamos National Laboratory describe the project as being essential for designing the plutonium pit disassembly and conversion facility (PDCF):

- On Page 2 of the ARIES Fact Sheet, it states in reference to the Pilot Demonstration Program at Los Alamos that, "detailed knowledge of the rate of throughput and the physical and chemical nature of the pits are required to do detailed design work on an ARIES facility."

  At the MOX Industry Conference in Atlanta on May 21, 1998, demonstration project personnel stated that the data from the ARIES demonstration is "needed to support PDCF design."

On the other hand, DOE has characterized the demonstration project as more of a supplement to the design work:

- On Page 1-11 of the Draft SPDEIS, DOE wrote that the demonstration project, "would help 'fine tune' the operational parameters of the pit conversion facility."
- In the Plutonium Pit Disassembly and Conversion Environmental Assessment Pre-Approval Review, DOE wrote that the resulting experience from the proposed demonstration project would "be applied to expedite the design of the production disassembly and conversion facility should it be decided to construct this facility in the SPD EIS ROD."

What is the exact purpose of the demonstration project? There does not seem to be a consistent set of objectives being reported.

1

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FD302

FD302–1 **Pit Demonstration EA**

DOE believes that the *Pit Disassembly and Conversion Demonstration EA* (DOE/EA-1207, August 1998) clearly sets forth the basic objectives of this demonstration, as follows: demonstrate the feasibility of the pit disassembly and conversion processes; test various processes for the different parts of the pit disassembly and conversion process to optimize procedures and parameters and reduce dose to workers (as the number of pits to be dismantled would significantly increase); develop processes, procedures, and equipment for the disassembly of all types of surplus pits; and demonstrate that the plutonium metal from pits of varying types can be consistently converted to an oxide form that is suitable for use as feed for immobilization and MOX fuel fabrication.

As the EA also reflects, the resulting experience from this demonstration would be used to supplement information developed to support the design of the full-scale conversion facility should DOE decide to construct that facility. It was never DOE's intention that this demonstration would be the only source of information relevant to the design work for a full-scale pit conversion facility. DOE does not believe that the examples provided by the commentor to support the position that there are conflicting objectives on this demonstration contradict DOE's position on the use of information from the demonstration, but simply use different but compatible words to describe that process.

STAND OF AMARILLO, INC.
DON MONIAK
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How can DOE propose to design and construct a facility before detailed information from the demonstration project is available? One of the "Lessons Learned" from plutonium pit storage was that, "in order to obtain cost avoidance and remain on schedule, it is important to identify all requirements prior to design."[1]

2

At what point will DOE decide whether the technologies it is proposing to use are feasible at an industrial scale?

DOE should determine what the requirements are for the pit disassembly and conversion facility before it endeavors to build the facility.

Sincerely:

Don Moniak
Program Director
STAND of Amarillo, Inc.

FD302

FD302–2 **Pit Demonstration EA**

DOE is not proposing to design and construct a full-scale pit conversion facility before information from the pit disassembly and conversion demonstration is available. Should DOE decide to build a full-scale pit conversion facility, the tentative schedule reflects that construction would begin sometime in 2001. Facility design, however, would take place during approximately 1999-2001. The demonstration would focus on equipment design and process development. Because the demonstration could continue for up to 4 years, information transfer conducive to fine-tuning of the operational parameters of a pit conversion facility can be provided continually throughout the facility design phase. Also, because the information from the demonstration would be used to supplement other information developed to support the design of a full-scale pit conversion facility, it would not be necessary for the demonstration to be completed before beginning facility design and initial construction. These processes can be carried on simultaneously. While DOE believes that a full-scale pit conversion facility is feasible, it would not build such a facility until it has been determined that the proposed technologies and required capabilities it is proposing are clearly shown to be feasible. The pit disassembly and conversion demonstration will play a significant role in this process.

STAND OF AMARILLO, INC.
DON MONIAK
PAGE 1 OF 3

STAND of Amarillo, Inc.

September 15, 1998

STAND COMMENT # 5
Surplus Plutonium Disposition Draft Environmental Impact Statement (Draft SPDEIS)
Re: Alternatives for Plutonium pit disassembly and conversion

Office of Fissile Materials Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Department of Energy, Office of Fissile Materials Management:

The Draft SPDEIS does not contain, as required by NEPA, a discussion or analysis of the reasonable alternatives that are available to disassemble plutonium pits and convert plutonium metal to a declassified form suitable for both long-term disposition and international inspections and safeguards.

In related NEPA documents, DOE has never evaluated the range of options available for disassembling plutonium pits and converting the plutonium in the pits to meet storage and disposition objectives. Instead, DOE chose a plutonium pit disassembly and conversion process (ARIES) that was not originally designed to produce materials suitable for disposition technologies, and which the MOX Industry considers a controversial technology. By pursuing this approach to plutonium pit disassembly and conversion, DOE has been in violation of NEPA for failing to conduct an analysis of the full range of alternatives for demilitarizing plutonium pits and converting plutonium to a form suitable for long-term storage and/or disposition.

In the SPDEIS, DOE must:

1. *Analyze the full range of technological options that are available to disassemble plutonium pits and convert plutonium metal to a declassified form suitable for both long-term disposition and international inspections and safeguards.*

2. *Analyze the range of technical options that have been addressed in other DOE and contractor analyses.* In its Technical Risk Assessment (TRA)[1] for the PDCF, DOE contractors evaluated three options for plutonium pit disassembly and conversion:

- The Baseline Option which would require processing of whole pits at the PDCF but not pit parts and plutonium not associated with pits; production of both metal and oxide by the PDCF; and the only contaminants of concern for MOX fuel that would be removed is gallium.

[1] Kidinger, John, ARES Corporation, John Darby and Desmond Stack, Los Alamos National Laboratory. 1997. Technical Risk Assessment for the Department of Energy Pit Disassembly and Conversion Facility Final Report. September, 1997. LA-UR-97-2236.

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FD303

1

FD303–1 **Alternatives**

DOE determined that aqueous processing was not a reasonable alternative for pit conversion because current aqueous processes using existing facilities would produce significant amounts of waste, and aqueous processing would complicate international safeguard regimes. Dry processing was analyzed in the *Storage and Disposition PEIS* and this SPD EIS.

Processing pits and clean metal plutonium in the pit conversion facility is analyzed in this EIS. This analysis bounds all of the variations of starting materials listed in the comment that could be processed in the pit conversion facility. This statement is based on two facts. First, the amount of clean metal that would be processed in the pit conversion facility is small compared with the amount of material coming from pits. Second, DOE is not proposing to process pit parts or other plutonium not associated with pits in the pit conversion facility. These materials would be converted to an oxide form in the conversion area of the immobilization facility. DOE is not including the plutonium-polishing process (a small-scale aqueous process) as part of the pit conversion facility; that process would be part of the MOX facility. DOE would use only dry processes in the pit conversion facility. For this reason, the thermal process for removing gallium may not be needed in the pit conversion facility (see revised Section 2.4.1.2). Section 2.4.3 was revised to include a description of the plutonium-polishing process that would be used in the MOX facility. Plutonium dioxide is the starting form for the disposition of surplus plutonium for either the immobilization or MOX approach. This EIS analyzes the environmental impacts of converting surplus pits into plutonium dioxide that can be used in either the immobilization or MOX facility. No additional aqueous processing would be necessary to prepare the plutonium dioxide for immobilization.

- **The MOX Grade Oxide Option which would require processing of all plutonium pits and plutonium not associated with pits, production of both metal and oxide; production of plutonium oxide that will be of MOX fuel quality that will involve removing other contaminants such as americium-241; and processing to stabilize and recover materials from classified internal parts. This option appears to most closely resemble the Design-Only Conceptual Design Concept for the PDCF and the presentations made by LANL personnel at the MOX industry conference in Atlanta.**

- **The Metal-Only Option in which only "nonproblem pits will be processed and the product will be metal only, with no oxide produced."**

Both the MOX and Baseline Options, as well as the conversion process for the immobilization facility, involve the use of the HYDOX process, even though the Technical Risk Assessment reported, "significant disagreement among technical persons as to whether HYDOX is required and whether or not HYDOX is the preferred technique when producing plutonium oxide." The report further stated that, "many of the pits, perhaps as many as 80%, can bypass the hydride/dehydride (conversion to metal) module as the plutonium metal can be mechanically separated from the pits."

3. *Analyze the various options involved with "aqueous" processing*, also known as reprocessing and "chemical purification," that DOE has repeatedly left open as an option to thermal processes. At the May 20-21, 1998 MOX Industry Conference in Atlanta, considerable objections were raised to the proposed plutonium conversion processes by members of consortiums seeking to design, construct, and operate a MOX fuel fabrication facility. DOE has repeatedly cited aqueous processes as an option to produce MOX fuel feedstock if the proposed thermal processes are not demonstrated to be feasible to meet this objective. At the Atlanta MOX conference, LANL personnel identified "aqueous derived oxide" as another "near future" source of plutonium oxide. 1

More recently, DOE allowed consortiums bidding to construct and operate a MOX fuel fabrication facility to add a "plutonium polishing facility." A plutonium polishing facility would be added to the MOX fuel plant and where plutonium metal or oxide produced at the PDCF "can be dissolved...in nitric acid with the minimal usage of hydrofluoric acid, and its complexing agent, aluminum nitrate."[2]

In the Draft SPDEIS, DOE analyzed aqueous processing only as a "contingency," This is an insufficient analysis, as DOE clearly considers the "polishing" process to be a reasonable, and even likely alternative. By identifying liquid acid plutonium pit processing only as a contingency, DOE also skewed the analysis in favor of the MOX option.

[2] Draft Data Report for Generic Site Add-On Facility for Plutonium Polishing, 1998, Oak Ridge National Laboratory

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STAND OF AMARILLO, INC.
DON MONIAK
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4. *Identify and analyze the range of alternatives for a final product from plutonium pit disassembly and conversion.*

DOE should identify and analyze the different requirements--in terms of activities, hazards, impacts, and risks--between the various plutonium end-products that could result from plutonium pit disassembly and conversion. For example, the alternative of gallium removal is not discussed in the context of immobilization. The various end products DOE should analyze include:

- plutonium oxide suitable for use in Mixed Oxide (MOX) fuel;
- plutonium oxide suitable for use in the Ceramification Can-In-Canister variant of immobilization;
- plutonium oxide suitable for both storage and disposition;
- plutonium metal and/or oxide suitable for storage;
- plutonium metal suitable for storage while awaiting conversion for disposition.

1

Specifically, DOE must identify whether dry plutonium conversion processes being proposed for the immobilization facility will produce a suitable product for the immobilization technology, or whether aqueous processing is also necessary for immobilization.

Sincerely:

Don Moniak
Program Director
STAND of Amarillo, Inc.

FD303

STAND OF AMARILLO, INC.
DON MONIAK
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STAND of Amarillo, Inc.

September 15, 1998

STAND COMMENT # 6
Surplus Plutonium Disposition Draft Environmental Impact Statement **(Draft SPDEIS)**
Re: Use All Available Information

Office of Fissile Materials Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Department of Energy, Office of Fissile Materials Management:

DOE must incorporate all available information about plutonium disassembly and conversion processes into its NEPA process and documents. The public should be fully informed as to what is actually being proposed, the actual range of impacts and risks from proposed activities, and the technical uncertainties involved with the proposed plutonium processing technologies. Since the January 1997 decision on the Storage and Disposition PEIS, DOE has made considerable changes that are not reflected in the Record of Decision, and is obligated to use this opportunity to address those changes and provide to the public a clear picture of its proposed actions and ongoing activities. 1

DOE is already implementing a procurement process for the design, construction, and possible operation of a full scale plutonium pit disassembly facility. DOE already has accepted bids for the Architecture and Engineering services for designing the facility. Procurement solicitations are not pursued casually due to the high costs to industry to compile bid packages. The information pertaining to procurement must be of high quality to avoid lengthy and costly litigation.

However, for all parts of the plutonium disposition program, the information pertaining to procurement is often very different from the information presented in DOE's NEPA documents. Two documents related to the procurement process that are uncited and not referenced in the PDCD-EA, yet provide considerably more accurate and comprehensive information are: 2

- Los Alamos National Laboratory and Fluor Daniel, Inc. 1997. *Design-Only Conceptual Design Report for the Pit Disassembly and Conversion Facility.* Project No. 99-D-141. Prepared for the DOE Office of Fissile Materials Disposition. December 12, 1997. (PDCF Design Report)

The general design diagrams of the PDCF (Figures 2-7 to 2-9, Pages 2-16 to 2-18) reported in the Draft SPDEIS are considerably different than the design diagrams in the Design Report. DOE should explain these differences in the SPDEIS.

- Kidinger, John, ARES Corporation, John Darby and Desmond Stack, Los Alamos National Laboratory. 1997 Technical Risk Assessment for the Department of Energy Pit Disassembly and Conversion Facility Final Report. September, 1997 LA-UR-97-2236.

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FD304

FD304–1 **General SPD EIS and NEPA Process**

DOE acknowledges the commentor's remarks concerning the completeness of this SPD EIS, public information, technical uncertainties, and changes since the January 1997 ROD on the *Storage and Disposition PEIS.* DOE has prepared this SPD EIS in accordance with the provisions of NEPA (42 U.S.C. 4321 et seq.) and the related CEQ and DOE implementation regulations (40 CFR 1500 through 1508 and 10 CFR 1021, respectively). It is intended as a source of environmental information for the DOE decisionmakers and the public. The primary objective of this EIS is a comprehensive description of proposed surplus plutonium disposition actions and alternatives and their potential environmental impacts. As with any EIS, technical information is included to the extent that it is required to understand those actions and impacts. Plutonium-processing technologies proposed by DOE are discussed in Sections 2.4.12 and 2.4.3.2. Disposition facilities analyzed in this EIS are consistent with the decision made in the *Storage and Disposition PEIS* ROD as amended.

FD304–2 **Pit Disassembly and Conversion**

DOE has accepted qualification bids only for the design of the facility and agrees that information pertaining to procurement must be of high quality. Qualification bids are relatively inexpensive to prepare. Neither of the two documents cited by the commentor was used in preparing the *Pit Disassembly and Conversion Demonstration EA* (DOE/EA-1207, August 1998). The information presented in those two documents is not specific to the demonstration as it would be set up within TA–55 at LANL. While those documents contain information beyond the scope of this EA, the information may be of interest to the public. Therefore, both documents were referenced in the final EA as sources of additional information.

There are differences in the design diagrams because this SPD EIS presents a more conservative view than the Design-Only Conceptual Design Report, which was a preliminary effort, to establish a bounding condition for analysis of environmental impact.

STAND OF AMARILLO, INC.
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The TRA exemplifies of how DOE technical documents drafted for internal distribution are generally coherent, clear, concise, and comprehensive. In contrast, documents written for public distribution--such as the SPDEIS--are generally incoherent, confusing, vague, redundant, and incomplete.

- DOE must incorporate the findings of the Technical Risk Assessment into the Final EIS, and could include it as a separate appendix.
- DOE should incorporate the recommendations of the TRA into the final SPDEIS and discuss to what extent the findings in the TRA were incorporated into the Draft SPDEIS.

3

The TRA provides additional support for removing Pantex as a plutonium processing candidate site. The strongest recommendation made by the TRA (Page 69) is that, "it is recommended that the site selection process for the PDCF strongly consider the existing site capabilities and experience in those areas." It is not evident that DOE has considered the capabilities and experience of the candidate sites during the SPDEIS process.

The TRA team (Page 74) reached the same conclusions as the general public, that "the site-selection process for the PDCF now in progress includes a very limited evaluation of attributes." Yet, DOE forged its evaluation to fit the desired decision, rather than an openly and honestly evaluate reasonable and realistic criteria that would guide a decision for the public good.

In general, the TRA's lowest risk rankings correspond to those processes that DOE has identified as site selection criteria, and the highest risk rankings correspond to processes that DOE has not identified as site selection criteria.

4

- The TRA's lowest risk ranking was assigned to the "Safeguards and Security System," yet DOE is identifying safeguards and security as a key evaluation criteria.
- Pit shipments were not identified by the TRA as a critical risk, whereas plutonium product shipping made the critical risk list. DOE reversed this risk ranking in the Draft SPDEIS.
- Radiation monitoring and dosimetry, relatively minor programs at Pantex, are listed as a high risk factor in the TRA. Radiation accident potential is listed as high risk factor for key PDCF components such as HYDOX, Gallium Removal, and chemical purification.

Sincerely:

Don Moniak
Program Director
STAND of Amarillo, Inc.

FD304

FD304–3 **Pit Disassembly and Conversion**

Technical risk assessments are important in that they enable the decisionmaker to make an informed decision. The TRA addresses technical, cost, and schedule risks of the proposed pit conversion facility. Findings and recommendations presented in the TRA have been taken into consideration in developing the proposed pit disassembly and conversion process, and research is ongoing to minimize the risk factors that have been identified.

This SPD EIS characterizes the bounding environmental impacts of the pit disassembly and conversion operations. Insofar as the technical risks expressed in the TRA affect these environmental impacts, they are reflected in this EIS.

FD304–4 **Alternatives**

Section 2.3.1 of the SPD Draft EIS explained that a range of 23 reasonable alternatives remained after evaluating over 64 options against three screening criteria: worker and public exposure to radiation, proliferation concerns due to transportation of materials, and infrastructure cost. These 23 reasonable alternatives were evaluated in the SPD Draft EIS. After the Draft was issued, DOE eliminated as unreasonable the 8 alternatives that would involve use of portions of Building 221–F with a new annex at SRS for plutonium conversion and immobilization, thereby reducing the number of reasonable alternatives to the 15 that are analyzed in the SPD Final EIS. DOE has analyzed each environmental resource area in a consistent manner across all the alternatives to allow for a fair comparison among the alternatives and among the candidate sites for the proposed surplus plutonium disposition facilities. The results of these analyses, presented in Chapter 4 of Volume I and summarized in Section 2.18, demonstrate that the activities would not have major impacts on any of the candidate sites.

While the findings of the TRA were considered as discussed in response FD304–3, other siting considerations were also used as discussed above. Where there are differences between the findings in the TRA and the data used in this EIS, efforts have been made to use the latest data.

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DON MONIAK
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As indicated in the revised Section 1.6, SRS is preferred for the pit conversion facility because the site has extensive experience with plutonium processing, and the pit conversion facility complements existing missions and takes advantage of existing infrastructure. In determining its preference, DOE also considered the transportation requirements for each alternative. All the candidate sites were considered to have adequate safeguards and security systems in place, as well as the capability to perform the necessary radiation monitoring and dosimetry. Potential accidents for the three proposed surplus plutonium disposition facilities at all of the DOE candidate sites are analyzed in Chapter 4 of Volume I and Appendix K. Decisions on the surplus plutonium disposition program at Pantex will be based on environmental analyses, technical and cost reports, national policy and nonproliferation considerations, and public input. DOE will announce its decisions regarding facility siting and approach to surplus plutonium disposition in the SPD EIS ROD.

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DON MONIAK
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STAND of Amarillo, Inc.

September 15, 1998

STAND COMMENT # 7
Surplus Plutonium Disposition Draft Environmental Impact Statement (Draft SPDEIS)
Re: Analyzing Significant Impacts

Office of Fissile Materials Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Department of Energy, Office of Fissile Materials Management:

There will be significant direct and cumulative effects of the preferred alternatives in the Draft SPDEIS that have not been properly analyzed in by DOE.

A. The most significant direct effects of the proposed action will be air emissions of radioactive and nonradioactive materials.

According to the Draft SPDEIS, routine releases of tritium at the Pit disassembly and conversion facility (PDCF) during normal operations are expected to be as high as 1100 curies per year. For Pantex, this would constitute a significant impact. During current missions and operations, a similar impact would only occur only in the event of an accident. The proposed allowable and routine tritium releases would be more than 10,000 times higher than the releases from routine operations at Pantex today. 1

DOE also failed to report known sources of air pollution that will result from the proposed action. Most importantly, DOE neglected to identify and address beryllium air emissions. The PDCF *Design-Only Conceptual Design Report* states that, "the National Emissions Standards for Hazardous Air pollutants (NESHAP's) are applicable to the PDCF, specifically regulating emissions from beryllium and radionuclides to the ambient air" and that "an application for approval of construction or modification of an existing source is mandatory for the owner or operator of a beryllium or radionuclide operations." Clearly, the design documents identify the PDCF as a beryllium operation. 2

In its 1994 Environmental Checklist for ARIES, LANL wrote that, "Beryllium is handled in the PDCF as relatively large pieces. The pit cutting operations will make beryllium chips and turnings, but these are relatively large particles not easily entrained." However, the ARIES EC also contained the statement that, "the expected emissions are within the quantity allowed under the current beryllium permit for TA-55-4."[1]

[1]U.S. DOE. 1994. Memorandum from M. Diana Webb, NEPA Compliance Officer to Jeff Robbins, NEPA Compliance Officer. Re: DOE Environmental Checklist.

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FD305

FD305–1 **Human Health Risk**

The bounding alternative would be locating the pit conversion and MOX facilities at Pantex (see Alternative 9). About 0.000104 Ci/yr of plutonium and americium and 1,100 Ci/yr of tritium, total, would be released to the atmosphere from these facilities. In 1996, the airborne releases from Pantex operations were 1.6×10^{-17} Ci of thorium 232, 0.000146 Ci of uranium 238, and 0.103 Ci of tritium (*1996 Environmental Report for Pantex Plant*, DOE/AL/65030-9704, May 1997). While the commentor is correct in stating that plutonium processing would result in radiation releases greater than those from current operations, including a tritium release 10,000 times greater, the doses and resulting adverse health effects associated with the increased releases would be very small. The dose to the MEI from these facilities would be increased by 0.068 mrem/yr, and the dose to the population living within 80 km (50 mi) of Pantex in 2010 would be increased by 0.59 person-rem/yr. For 10 years of normal operation, the increased risk of an LCF to the MEI would be 3.4×10^{-7}, and the increased number of LCFs to the 80-km (50-mi) population would be 0.003.

FD305–2 **Air Quality and Noise**

The 1994 analysis performed by LANL referred to the possibility of airborne releases of beryllium, a hazardous air pollutant, from pit disassembly and conversion. Subsequent analysis from LANL indicates that there would not be any airborne releases of beryllium (*Pit Disassembly and Conversion Facility, Environmental Impact Statement Data Report—Pantex Plant*, LA-UR-97-2909, June 1998). Because the beryllium is expected to remain in metal form at all times, the health hazards are minimized. The beryllium would be present in large pieces and cuttings created when the pit was bisected. These cuttings would be too large to become airborne. There would be no grinding; thus, there would not be any pieces of beryllium small enough to become airborne. Because the pieces and cuttings would be contaminated with trace levels of radioactive materials, they would primarily be disposed of as TRU waste and is included in the waste projections in this SPD EIS.

Section 2.4.1.1 was revised to discuss beryllium and its presence in the pit conversion facility.

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DON MONIAK
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C. The most significant cumulative effect is the introduction of plutonium processing missions to a DOE site that has never conducted these missions. In the Stockpile Stewardship and Management PEIS (1996), DOE reported that, "plutonium would not be introduced into a site that does not currently have a plutonium infrastructure because of the high cost of new plutonium facilities and the complexity of introducing operations into sites without current plutonium capabilities."

DOE identifies Pantex in numerous documents, including the Draft SPDEIS, as not having existing plutonium processing capabilities. DOE must analyze the high cost and complexity of introducing plutonium operations to Pantex, including, but not limited to developing the infrastructure required to a successful implementation of this mission–that adequately protects workers, the community, and the environment. 3

In addition, DOE must analyze the long-term cumulative effects of building new Category I nuclear facilities. These facilities will, in all likelihood, be used for subsequent plutonium missions, so the analyses for building and operating new plutonium facilities must take into account the probability of subsequent missions, including the environmental remediation that will follow.

Sincerely:

Don Moniak
Program Director
STAND of Amarillo, Inc.

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FD305

FD305–3 **Alternatives**

The *Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management* (SSM PEIS) (DOE/EIS-0236, September 1996) states that the pit fabrication mission would not be introduced into a site that does not have an existing plutonium infrastructure because of the high cost of new plutonium facilities and the complexity of introducing plutonium operations into sites without current plutonium capabilities. The SSM PEIS states further that an important element of the site selection strategy is to maximize the use of existing infrastructure and facilities as the nuclear weapons complex becomes smaller and more efficient in the 21st century; thus, no new facilities were to be built to accommodate stockpile management missions. Accordingly, DOE considered as reasonable only those sites with existing infrastructure capable of supporting a pit fabrication mission. Although Pantex has the infrastructure to carry out its current weapons assembly and disassembly mission and nonintrusive pit reuse program, it was not considered a viable alternative for the pit fabrication mission because it did not possess sufficient capability and infrastructure to meet the SSM PEIS siting assumption stated above. Among the operations that were considered in developing siting alternatives for pit fabrication in the SSM PEIS were plutonium foundry and mechanical processes, including casting, shaping, machining, and bonding; a plutonium-processing capability for extracting and purifying plutonium to a reusable form either from pits or residues; and assembly operations involving seal welding and postassembly processing.

When comparing the site selection strategy for pit disassembly and conversion with that used for the pit fabrication mission, the siting criteria in the SSM PEIS have little or no bearing on siting criteria used in this SPD EIS. Pit disassembly and conversion do not require the foundry and mechanical processes discussed in the SSM PEIS and can be accomplished in a stand-alone facility Also, the SSM PEIS siting assumptions include a requirement to use existing facilities, whereas, the pit conversion facility would be a new structure no matter where it is located.

Although cost will be a factor in the decisionmaking process, this SPD EIS contains environmental impact data and does not address the costs associated with the various alternatives. A separate cost report, *Cost Analysis in Support*

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DON MONIAK
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of Site Selection for Surplus Weapons-Usable Plutonium Disposition (DOE/MD-0009, July 1998), which analyzes the site-specific cost estimates for each alternative, was made available around the same time as the SPD Draft EIS. This report and the *Plutonium Disposition Life-Cycle Costs and Cost-Related Comment Resolution Document* (DOE/MD-0013, November 1999), which covers recent life-cycle cost analyses associated with the preferred alternative, are available on the MD Web site at http://www.doe-md.com and in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS and Washington, D.C.

D&D is discussed in Section 4.31. DOE will evaluate options for D&D or reuse of the proposed facilities at the end of the surplus plutonium disposition program. At that time, DOE will perform engineering evaluations, environmental studies, and further NEPA review to assess the consequences of different courses of action, including projected waste generation quantities.

STAND OF AMARILLO, INC.
DON MONIAK
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STAND of Amarillo, Inc.

September 15, 1998

STAND COMMENT # 8
Surplus Plutonium Disposition Draft Environmental Impact Statement **(Draft SPDEIS)**
Re: Insufficient Analysis of Groundwater Impacts

Office of Fissile Materials Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Department of Energy, Office of Fissile Materials Management.

DOE must conduct a full analysis to address increased tritium contamination in regional groundwater resources at all candidate sites. STAND's primary concern is the Ogallala aquifer--regionally critical to both urban and rural areas--and other groundwater resources at Pantex. Because tritium concentrations in groundwater throughout the U.S. physically reflects historical DOE activities, DOE has much experience to reference. DOE must use this experience and report effects of tritium releases of past activities and, at a minimum, clearly identify pathways for tritium through the environment. 1

In the Draft SPDEIS DOE wrote that, "the Storage and Disposition PEIS concluded that the facility would not have any impact on groundwater quality. There are no new data available to indicate that this conclusion should be revisited." Indeed, significant new data are available to the public and this conclusion is absolutely inaccurate. Most significant is the operation of a Special Recovery line in the PDCF which would result in airborne emissions of 1,100 curies per year of gaseous tritium. These emissions represent a 10,000 fold increase over existing levels at Pantex

For a PDCF, DOE has indicated that, "the most severe consequences of a design basis accident...would be associated with a tritium release." (Page 4-89). The tritium release would involve "a major glovebox fire is assumed to heat multiple parts contaminated with up to 20 grams of tritium and convert it all to tritiated water vapor....resulting in a release of 20 grams through the stack to the atmosphere." This accident would release nearly 200,000 curies of tritium to the atmosphere. The risk of this accident occurring ranges from 1 in 10,000 to 1 in 1,000,000. The wide range of this risk estimate indicates great uncertainty in DOE's estimates. 2

When DOE was rationalizing plutonium pit storage at Pantex, it conducted a study evaluating the risks of contaminating the Ogallala aquifer with plutonium. This same approach is necessary for the design basis accident for the PDCF.

Sincerely:
Don Moniak
Program Director
STAND of Amarillo, Inc

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FD306

FD306–1 **Human Health Risk**

DOE acknowledges that the estimated gaseous tritium release of 1,100 Ci/yr from the pit conversion facility would result in a tritium release 10,000 times greater than existing levels at Pantex. However, these releases to the air would have no impact on groundwater quality during normal operations. The doses and resulting adverse health effects (via the inhalation and ingestion pathways) associated with this increased release would be very small. The dose to the MEI would be increased by 0.062 mrem/yr, and the dose to the population living within 80 km (50 mi) of Pantex in 2010 would be increased by 0.58 person-rem/yr. For 10 years of normal operation, the increased risk of an LCF to the MEI would be 3.1×10^{-7}, and the increased number of LCFs to the 80-km (50-mi) population would be 0.0029.

FD306–2 **Facility Accidents**

The assessment of consequences of the accidental tritium release is consistent with the methodology used in the *Final Programmatic Environmental Impact Statement for Tritium Supply and Recycling* (DOE/EIS-0161, October 1995). Unlike plutonium, oxidized tritium (i.e., water vapor) does not significantly deposit on the ground for subsequent percolation into the local groundwater except in cases of rain or dew. Pantex has a relatively arid climate, so the chance of these weather conditions at the time of an accident is slight.

Moreover, even if it were to happen, Section 4.6.1.2 of the *Final Environmental Impact Statement for the Continued Operation of the Pantex Plant and Associated Storage of Nuclear Weapon Components* (DOE/EIS-0225, November 1996) indicates that actual movement of contaminated groundwater off the site would require about 10 to 20 years, and may take as long as 50 or more years to move a contaminant plume off the site using the most current test data. The half-life of tritium is 12 years; therefore, the actual quantity of any hypothetical contamination would be reduced by a factor of roughly 2 to 16 by the time it moved off the site. Because of these considerations, health consequences as a result of contamination of the Ogallala aquifer were not considered to be characteristic of a tritium release accident. Appendix K.1.4.2 was revised to include a discussion of the treatment of groundwater accidentally contaminated by tritium.

STAND OF AMARILLO, INC.
DON MONIAK
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STAND of Amarillo, Inc.

September 28, 1998

STAND COMMENT # 09
Surplus Plutonium Disposition Draft Environmental Impact Statement (Draft SPDEIS)
Re: Insufficient Analysis of Visual Impacts of New Plutonium Facilities

Office of Fissile Materials Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Department of Energy, Office of Fissile Materials Management:

The Draft SPDEIS contains an insufficient and inconsistent analysis of the visual impacts of locating new plutonium facilities at Pantex. STAND believes that constructing and operating plutonium disposition facility or facilities in Zone 4 at Pantex would constitute an obvious, dramatic landscape change and thus have a negative impact on the visual quality of the area.

The Department of Energy must conduct a rigorous analysis--applying consistent methodology and criteria--of the effects on visual quality from new plutonium facilities at Pantex. The analysis must include an assessment of the effects on surrounding private property values created by major landscape changes. DOE must conduct an analysis of the changes in visual quality from constructing and operating plutonium facilities in Zone 4 at Pantex. A simple comparison of existing conditions in Zone 4 versus proposed conditions in Zone 4 shows a obvious change in the visual character. 1

Zone 4 Existing	Zone 4 Proposed
No smokestack	115-foot high smokestack at PDCF
No manufacturing or processing facilities	Two storied plutonium processing facilities
Storage facilities 14-16 feet high	Storage facilities would remain

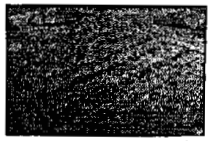

Figure 1: Aerial View of Zone 4 Storage Area at Pantex.
(Credit: Robert Del Tredici)

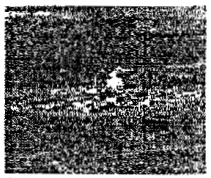

Figure 2: Aerial View of Industrial Area at INEEL.
(Credit: INEEL)

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FD334

FD334–1 **Land Use and Visual Resources**

On the basis of public comment and to correct inaccuracies, the Land Use and Visual Resources sections of Chapter 4 of Volume I for all the candidate sites were reviewed and revised, as appropriate, to ensure consistency in the analyses of the candidate sites. Specifically, Section 4.26.3.5.2 was revised to clarify that the proposed surplus plutonium disposition facilities would be the tallest and largest facilities in Zone 4 and would be visible from U.S. Route 60.

As a point of clarification, the "smokestack" referenced in connection with pit conversion facility is not intended to discharge smoke under normal operating conditions. It would be used to transport air from the building to the outside via the building's ventilation system. The expected emissions from this stack are characterized in Appendixes G and J.

STAND OF AMARILLO, INC.
DON MONIAK
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STAND Comment #9, Page 2 of 3

In the Draft SPDEIS, DOE neglected to consider the unique nature of the Pantex area. On clear high-pressure days, tall smokestacks are visible more than 15 miles away on the Southern High Plains. The Amarillo skyline is visible from Pantex--17 miles away.

In Section 4.26 of the Draft SPDEIS--"additional environmental resource analyses"--visual resources are discussed but not analyzed. For all "additional resources" DOE concluded (page 4-1) that there would be "minimal or no impacts at the candidate sites regardless of the disposition alternative being considered." The environmental consequences were derived by, "comparing facility characteristics and requirements from Chapter 2 and Appendix E with affected environmental information from Chapter 3." 1

The environmental information in Chapter 3 is inaccurate in terms of the Pantex visual resources assessment. Zone 4 at Pantex is not visible from U.S. Highway 60. The environmental information also does not present an accurate portrayal of the existing conditions in Zone 4.

As a result, for each candidate site DOE erroneously wrote (Section 4.26) that new facilities "would remain consistent with the industrialized character of the landscape and the current Visual Resource Management . designation." The impacts on visual resources are inaccurately presented as equal despite wide variation in topographical features, distance from proposed facilities to site boundary and private property, existing character of the proposed facility locations, and vegetation cover. 2

DOE did not conduct a consistent analysis for Pantex. Instead, it used very different criteria for assessing Pantex as compared to other sites, and then presented the impacts as equal.
The following issues should be addressed and DOE should admit that there are clear distinctions between the four sites.

1. Pantex was analyzed for existing overall site conditions, not specific areas where proposed facilities would be located. DOE wrote (Page 4-328) that, "in height and size, the proposed facilities would be similar to buildings in other industrialized areas of the site." This is an inaccurate statement, as there are no facilities with smokestacks at Pantex, no Category I nuclear facilities, and no manufacturing buildings in Zone 4. 3

In contrast, DOE wrote that, "in height and size, the proposed facilities would be similar to existing buildings" in the specific areas, such as 400 at Hanford, INTEC at INEEL, and F-Area at SRS. These specific areas are already characterized by heavy industrialization where smokestacks are the highest and most dominant visual feature.

2. DOE described the tallest structures at Pantex as water towers, whereas the tallest structures at Hanford, INEEL, and SRS were described as smokestacks generally over 200 feet high. These features correspond to the existing heavy industrial character of the proposed locations at other sites. By contrast, the Zone 12 industrial area at Pantex is barely visible from the north end of the Pantex plant, and even the Zone 4 bunkers are not readily noticeable. A 115 foot smokestack 4

FD334

FD334–2 **Land Use and Visual Resources**

To correct an inaccurate visual description of Zone 4, Section 3.4.10.2.2 was revised to state that the existing facilities in Zone 4 are not visible from the intersection of U.S. Route 60 and Texas FM 2373. Section 4.26.3.5.2 was revised to clarify that new structures and the stack associated with the proposed pit conversion facility would be visible from parts of U.S. Route 60.

FD334–3 **Land Use and Visual Resources**

Existing tall structures at Pantex include the 60-m (197-ft) meteorological tower located in the northeast portion of the site and the new water tower with a height of 44 m (145 ft) in Zone 11. Other tall structures are associated with the twin stacks of the steam plant with a height of 20 m (65 ft). There are currently no tall structures in Zone 4.

FD334–4 **Land Use and Visual Resources**

DOE acknowledges the commentor's conclusion that the descriptions of Hanford, INEEL, and SRS suggest existing heavy industrial character of those sites and the general lack of such features at Pantex, especially in regard to the addition of a 35 m (115 ft) smokestack, that would be readily visible and interrupt the current light industrial and agricultural landscape. As discussed in response FD334-1, Section 4.26.3.5.2 was revised to clarify that the proposed facilities would be the tallest and largest facilities in Zone 4.

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would be very noticeable and would interrupt what is essentially a mixed landscape of very light industrial (Zone 4 storage) and agricultural.

3. By neglecting to consider the differences in vegetative cover and topography for the four sites, DOE arrived at the amusing conclusion that while impacts at SRS would be minimal because facilities would be invisible, highly visible facilities at Pantex would have no impact on visual quality. 4

For the SRS analysis, DOE wrote that "facilities are generally not visible off the site because the views are limited by rolling terrain and heavy vegetation." At the other three sites, the views are not limited by vegetation, as they are all in open grassland or shrub-steppe environments. Distance and topography is a limiting factor at Hanford, as the 200 Area "cannot be seen from Columbia River or State Route 240." (Page 3-43, 3-44).

The contrast between these sites and Pantex is obvious. The distance from the proposed facilities to the private property boundary at Pantex would only be 1.1 miles and uninterrupted by topography or vegetative cover. DOE cannot legitimately claim that a 115 foot tall smokestack (such as that required for a PDCF) would not have a negative impact on the aesthetic values of the area and thus a negative impact on adjacent private property values 5

Sincerely:

Don Moniak
Program Director
STAND of Amarillo, Inc.

FD334

FD334–5 **Land Use and Visual Resources**

For the purpose of determining the radiation dose to the public and the onsite workers from normal operations, the stack associated with the proposed pit conversion facility was estimated to be 35 m (115 ft) high, in fact, the exact height of the stack would be determined during the design and permitting process and may be less than 35 m (115 ft). While a stack with a height of 35 m (115 ft) would be taller than existing facilities in Zone 4, it would not be the tallest structure at Pantex (as discussed in response FD334–3) or within the immediate viewshed of Pantex. There are many grain elevators in the area that are larger than the proposed stack in terms of width and depth and are as tall or taller in terms of height. Because the land around Pantex is largely agricultural, its value should not be impacted by the industrial nature of Pantex but by the perceived quality of the surrounding land in terms such as crop yield factors. As discussed in Section 3.4.10.1.1, because of the presence of the airport and other industry around Pantex, Amarillo's comprehensive land-use plan encourages compatible use rather than residential use for the area surrounding the plant so its impact on property values is limited.

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September 28, 1998

STAND COMMENT #10
Surplus Plutonium Disposition Draft Environmental Impact Statement **(Draft SPDEIS)**
Re: Plutonium Pit Composition and RCRA

Office of Fissile Materials Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Department of Energy, Office of Fissile Materials Management:

On page 2-10 of the Draft SPDEIS, DOE defined "clean metal" as "pure plutonium metal generally with less than 100 parts per million of any given impurity...The only major chemical impurities are gallium and radioactive decay products such as americium, neptunium, or uranium. Examples of pure metal items include.. finished machined weapon components." However, according to the ARIES Fact Sheet (See STAND Comment #2), up to 22 impurities in addition to gallium, americium, neptunium, and uranium may be found in plutonium pits:

Element	Maximum Concentration
Aluminum	not provided
Beryllium	3 parts per million (ppm)
Boron	50 ppm
Carbon	200 ppm
Cadmium	10 ppm
Calcium	500 ppm
Chromium	100 ppm
Copper	100 ppm
Erbium	not provided
Iron	< 400 ppm
Magnesium	500 ppm
Manganese	100 ppm
Lead	100 ppm
Nickel	< 400 ppm
Tin	100 ppm
Tantalum	100 ppm
Thorium	100 ppm
Titanium	100 ppm
Tungsten	200 ppm
Vanadium	not provided
Zinc	100 ppm
Tritium	10 mCi/kg

1

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FD335

FD335–1 **Pit Disassembly and Conversion**

None of the plutonium from the pits is considered impure metal. Any impurities that would prevent the plutonium dioxide from meeting MOX fuel specifications would be removed at the MOX facility. Section 2.4.1 was revised to acknowledge the presence of potential impurities in the pits to be dismantled.

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According to DOE's own information, several impurities may exist at levels above 100 parts per million in plutonium pits. Is there some pit plutonium that can be classified as "impure" metal? Why are these other materials not considered major impurities?

To what level do these impurities have to be removed during plutonium pit conversion? What differences exist between impurities reduction for MOX versus immobilization? 2

Several of these impurities are classified as hazardous metals under RCRA (Resource Conservation and Recovery Act). Will waste contaminated with hazardous metals be subject to RCRA regulations?

If not, how is DOE planing to process impure plutonium that contains hazardous metals such as lead, beryllium, cadmium, and chromium without having the resulting wastes be part of a mixed TRU waste or MLLW stream? For example, on Page H-38 of the Draft SPDEIS, DOE wrote that "lean-lined gloves are likely to be managed as mixed TRU waste." Yet, DOE does not identify the hazardous metals within plutonium pits at any point in the Draft SPDEIS as being part of the processing waste stream. 3

This is notable because on Page H-39 DOE does cite one impurity--tritium--as being part of the LLW stream. Yet, DOE does not provide information on how other pit impurities are categorized within the waste streams.

In the final SPDEIS, DOE must discuss and analyze the pit impurities in the waste stream.

Sincerely

Don Moniak
Program Director
STAND of Amarillo, Inc.

FD335

FD335–2 **Pit Disassembly and Conversion**

Gallium and other impurities would not have to be removed if the plutonium dioxide from the pit conversion facility were going to be used in the immobilization facility. For MOX fuel fabrication, the degree of removal of impurities would depend on the MOX fuel specification. The pit conversion facility is no longer being analyzed as a possible location for the plutonium-polishing process. DOE has included plutonium polishing as a component of the MOX facility to ensure adequate gallium and impurity removal from the plutonium dioxide. Section 2.4.3 and the hybrid alternatives analyses in Chapter 4 of Volume I were revised to include a discussion of plutonium polishing.

FD335–3 **Waste Management**

Any waste determined to be hazardous waste would be managed as required by RCRA and other applicable laws and regulations. The waste quantities presented in Appendix H and the Waste Management sections of Chapter 4 of Volume I include estimates of hazardous and mixed waste generation. The contaminants cited in the comment are present in the pit plutonium at only very low levels, and, with the exception of tritium, should largely remain entrained in the plutonium.

Appendix H was revised to discuss the inclusion of the impurities in the LLW and TRU waste streams. The beryllium would be present in large pieces and cuttings created when the pit was bisected. These cuttings would be too large to become airborne. There would be no grinding; thus, there would not be any pieces of beryllium small enough to become airborne. Because the pieces and cuttings would be contaminated with trace levels of radioactive materials, they would primarily be disposed of as TRU waste and is included in the waste projections in this SPD EIS. Section 2.4.1.1 was revised to discuss beryllium and its presence in the pit conversion facility.

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September 28, 1998

STAND COMMENT #11
Surplus Plutonium Disposition Draft Environmental Impact Statement **(Draft SPDEIS)**
Re: Scoping Comments

Office of Fissile Materials Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Department of Energy, Office of Fissile Materials Management:

According to the National Environmental Policy Act (NEPA), the "scoping" process for Environmental Impact Statements are intended for "identifying the significant issues related to a proposed action" (40CFR1501.7) in order to "determine the scope and the significant issues to be analyzed in depth in the environmental impact statement" (40CFR1501.7.(a).(2)).

During the scoping process for the SPDEIS, DOE received numerous comments but was very selective when incorporating these comments. Two examples illustrate DOE's tendency to incorporate comments from business interests within DOE's sphere of economic influence while ignoring comments from most stakeholder groups: 1

- The inclusion of the Fast Flux Test Facility as a "contingency" for burning MOX fuel;
- The inclusion of Pantex as a plutonium processor under all possible alternatives.

In June 1997 and August 1997, STAND of Amarillo submitted comments on the scope of the SPDEIS. STAND is resubmitting the majority of these comments (*original comments in italics*) as part of the public record for the Final SPDEIS and is requesting that DOE address and incorporate these comments into the Final SPDEIS.

I. During the scoping period, STAND wrote, in regard to the RAND report ***The Waste Heat Implications of Alternative Methods for Disposing Surplus Weapons Plutonium: Direct Disposal vs. MOX Burning in LWR's:*** 2

"This report is another indication of the serious flaws in past analyses concerning the MOX fuel option. This report must be fully considered and addressed within the EIS. DOE should identify all necessary changes to the Programmatic Environmental Impact Statement for the Storage and Disposition of Weapons-Usable Fissile Materials (S&D PEIS), or within the SPDEIS, that will be necessary as a result of this report."

DOE did not address these changes in the Draft SPDEIS. On pages 4-378 and 4-379, DOE reviewed its Generic Reactor analysis in the Final Storage and Disposition PEIS. The RAND report was not cited in this analysis. Because DOE did not provide a comparative analysis of the

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FD336

FD336–1 **General SPD EIS and NEPA Process**

For this SPD EIS, scoping comments were invited from all interested individuals and organizations. Those comments that identified issues related to the proposed action and not already destined for inclusion in this EIS prompted appropriate changes to the document. Comments that had to be addressed in other venues, did not relate to the disposition of surplus plutonium, or represented statements of opinion were considered but did not affect the scope of this EIS. A discussion of those issues identified from written and oral comments received during the scoping period for this EIS is provided as Section 1.4. Individual responses to the commentor's resubmitted scoping comments are provided below.

FD336–2 **General SPD EIS and NEPA Process**

The RAND study cited by the commentor analyzed a repository design that is very different from the NWPA repository design being analyzed by DOE. Moreover, the information in the study does not directly pertain to the disposition of surplus plutonium, and thus, was not used in the preparation of this SPD EIS. DOE has prepared a separate EIS, *Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* (DOE/EIS-0250D, July 1999), which analyzes the environmental impacts from construction, operation and monitoring, related transportation, and eventual closure of a potential geologic repository.

The SPD Final EIS was not issued until the proposed reactors had been identified and the public had an opportunity to comment on the reactor-specific information. As part of the procurement process, bidders were asked to provide environmental information to support their proposals. This information was analyzed in an Environmental Critique prepared for the DOE source selection board prior to award of the MOX fuel fabrication and irradiation services contract. DOE then prepared an Environmental Synopsis on the basis of the Environmental Critique, which was released to the public as Appendix P of the *Supplement to the SPD Draft EIS* in April 1999. This *Supplement* included a description of the affected environment around the three proposed reactor sites, and analyses of the

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MOX vs. Immobilization end-product, the Draft SPDEIS violates the NEPA requirement (40CFR1502.14.(b)) to "devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative results." 2

II. STAND wrote, in regard to DOE's *Program Acquisition Strategy For Obtaining Mixed Oxide Fuel Fabrication and Irradiation Services* (PAS):

A. "The PAS appears to be entirely incompatible with the SPDEIS, and raises issues that are not within the scope of the PEIS, or should be within the scope of this EIS and not an Acquisition Strategy."

During the SPDEIS process, DOE moved from the PAS procurement stage to development and release of a *Request for Proposals for MOX fuel Fabrication and Irradiation Services (MOX RFP).* Before DOE even decides to pursue the MOX option, it intends to award a contract to one of three consortiums that recently submitted bids. These three consortiums now have a vested financial interest to insure that the MOX option will be pursued. 3

This is a clear violation of the NEPA requirement (40CFR1506.1.(b)) that agencies, "will not prejudice the ultimate decision of the program" with interim actions, as "interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives." Proceeding with the MOX RFP has limited the full-immobilization alternative.

C. "The issues that DOE should address, as they pertain to the relationship of the SPDEIS and the PAS include:

What is the relationship of this PAS to the SPDEIS? DOE must clearly state how this PAS will impact the siting decision."

In reference to the MOX RFP, DOE stated in the Draft SPDEIS that, "environmental impact analysis relating to specific reactors will be included in the SPD Final EIS," although these analyses are scheduled to be made by MOX consortiums in their proposals. During the 1997 Scoping for the SPDEIS, DOE was repeatedly asked to involve nuclear reactor communities in the NEPA process. DOE ignored these scoping comments while moving forward on an exclusionary MOX procurement process designed to select MOX reactor sites. 4

DOE cannot justify soliciting public comment for the site selection process for plutonium processing facilities, while excluding public involvement in selecting plutonium irradiation facilities.

C. "Where will DOE analyze the environmental consequences and risks involved with the transportation and conversion of government furnished depleted uranium to uranium dioxide? The PAS identifies this action as a consortium responsibility, but provides no evident route for analyzing this action." 5

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potential environmental impacts of operating these reactors using MOX fuel (Sections 3.7 and 4.28 of this SPD EIS, respectively). During the 45-day period for public comment on the *Supplement*, DOE held a public hearing in Washington, D.C., on June 15, 1999, and invited comments. Responses to those comments are provided in Volume III, Chapter 4.

Section 2.18 provides a summary of impacts of the construction and normal operation of the proposed surplus plutonium disposition facilities that will allow reviewers to compare the various alternatives. Section 4.30 also includes a comparison of the incremental impacts, per metric ton of plutonium dioxide, of reapportioning materials from the MOX facility to the immobilization facility, including such factors as changes in the amount of waste generated and the associated human health risks.

FD336–3 **MOX RFP**

DOE's NEPA implementing regulations in 10 CFR 1021 contain a specific provision, Section 216, which allows contracts to be let contingent on completion of the NEPA process, in this case the SPD EIS ROD. This section requires DOE to phase contract work in a way that will allow the NEPA review process to be completed in advance of a go/no-go decision. In the case of this SPD EIS, the go/no-go decision will be determined by which alternative is selected by the decisionmaker. In accordance with 10 CFR 1021.216, DOE prepared and provided an Environmental Critique to the source selection team. The Environmental Critique evaluated impacts of the offer in the competitive range and was considered in awarding the contract. DOE also prepared a publicly available Environmental Synopsis on the basis of the Environmental Critique, as discussed in response FD336–2. As stipulated in DOE's phased contract with DCS, until and depending on the decisions regarding facility siting and approach to surplus plutonium disposition are made and announced in the SPD EIS ROD, no substantive design work or construction can be started by DCS on the MOX facility. Should DOE decide to pursue the No Action Alternative or the immobilization-only approach, the contract with DCS would end. The contract is phased so that only nonsite-specific base contract studies and plans can be completed before the ROD is issued, and options that would allow

construction and other work would be exercised by DOE if, and only if, the decision is made to pursue the MOX approach.

FD336–4 **MOX RFP**

The Program Acquisition Strategy, referred to by the commentor, has no relationship to the site selection process being followed in this SPD EIS. The selected team has agreed to work at any site chosen by DOE.

The remainder of this comment is addressed in that portion of response FD336–2 regarding opportunities for public comment on reactor-specific information.

FD336–5 **Feedstock**

The transportation requirements and risks associated with converting depleted uranium hexafluoride to uranium dioxide were included in the SPD Draft EIS and are included in this SPD EIS as shown in Tables L–2 through L–4. Section 4.30.3 was revised to include a discussion of the potential environmental impacts of uranium conversion. Environmental impacts of the conversion of depleted uranium hexafluoride to depleted uranium dioxide are based on impacts discussed in DOE's *Final Programmatic Environmental Impact Statement for Alternative Strategies for Long-Term Management and Use of Depleted Uranium Hexafluoride* (DOE/EIS-0269, April 1999).

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DON MONIAK
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In the Draft SPDEIS, DOE analyzed transportation of depleted uranium, but not conversion of uranium hexafluoride to uranium oxide. In the Final SPDEIS DOE must provide information on this latter requirement, as well as a comparative analysis for the uranium conversion requirements for MOX versus immobilization. 5

D. "What are the effects of producing gallium free plutonium dioxide for MOX fuel fabrication, as stated on page A-7 of the PAS? Where will this action be analyzed?"

In the Draft SPDEIS, DOE only addressed gallium free plutonium dioxide in terms of the "plutonium polishing contingency." In the Final SPDEIS, DOE must provide a comparative analysis of the effects of producing gallium free plutonium dioxide for MOX. 6

III. During scoping, STAND requested that "*DOE incorporate the following viewpoints into the SPDEIS*:

A. "Both alternatives for disposition-- MOX fuel fabrication and irradiation, and immobilization---involve technologies which have never been conducted on an industrial scale with weapons grade plutonium. 7

Both immobilization and MOX pose significant risks to public and environmental health. Both alternatives involve processing tons of plutonium, one of the most dangerous elements known, as well as an array of other toxic materials."

DOE neglected to address the past impacts of plutonium processing, and instead presented a Draft SPDEIS that identifies a set of goals rather than expected impacts, and which serves more as a project justification than an environmental impact statement. 8

B. "Both operations would add to the accumulation of transuranic waste for which DOE has no approved permanent disposal facility. The ones that are proposed are problematic and the SPDEIS should consider and analyze contingency plans for alternative storage and disposal sites, including the option of on-site storage and disposal."

No contingency to either WIPP or Yucca Mountain was identified in the Draft SPDEIS. In the final SPDEIS, DOE must identify and analyze on-site storage contingencies for dealing with the full range of expected TRU and High-Level Waste to be created by its proposed action. 9

IV. During scoping, STAND wrote:

"The SPDEIS is tiered to the Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Impact Statement (S&D PEIS). The S&D PEIS is a legally and scientifically insufficient document for the following reasons: 10

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FD336–6 Plutonium Polishing and Aqueous Processing

Appendix N of the SPD Draft EIS discusses the environmental impacts of adding a small plutonium-polishing process into either the pit conversion or MOX facility as a contingency. On the basis of public comments received on the SPD Draft EIS, and the analysis performed as part of the MOX procurement, DOE has included plutonium polishing as a component of the MOX facility to ensure adequate impurity removal (e.g., gallium) from the plutonium dioxide. Appendix N was deleted from the SPD Final EIS, and the impacts discussed therein were added to the impacts sections presented for the MOX facility in Chapter 4 of Volume I. Section 2.18.3 was also revised to include the impacts associated with plutonium polishing.

FD336–7 Alternatives

Although no domestic, commercial reactors are licensed to use plutonium-based fuel, several are designed to use MOX fuel, and others can easily accommodate a partial MOX core. The fabrication of MOX fuel and its use in commercial reactors have been accomplished in Western Europe. This experience would be used for disposition of the U.S. surplus plutonium. The environmental, safety, and health consequences of the MOX approach, as well as the production and disposal of any waste, are addressed in this SPD EIS. In addition, NRC would evaluate license applications and monitor the operations of both the MOX facility and the commercial reactors selected to use MOX fuel to ensure adequate margins of safety. While plutonium from warheads may never have been used in MOX fuel, its behavior in fuel is essentially the same as that of non-weapons-origin plutonium, and so does not present a situation different from MOX fuel experience to date. Although immobilization of weapons-usable surplus plutonium in a ceramic or glass form has not been demonstrated on an industrial scale, there exists a growing experience base and ongoing research and development activities related to the use of these technologies for immobilizing HLW. This experience is being adapted and applied to address the surplus plutonium disposition program.

FD336–8 **General SPD EIS and NEPA Process**

As noted in Section 1.1, this SPD EIS analyzes potential environmental consequences of alternative strategies for the disposition of a nominal 50 t (55 tons) of surplus weapons-grade plutonium. The overall goal as stated in Section 1.2 is to reduce the threat of nuclear weapons proliferation by conducting disposition of surplus plutonium in the United States in an environmentally safe and timely manner. Potential environmental impacts of the proposed actions are discussed at length in Chapter 4 of Volume I and summarized in Section 2.18. The past impacts of plutonium processing are not a result of the proposed action and are beyond the scope of this EIS.

FD336–9 **Repositories**

The management of TRU waste generated by the proposed surplus plutonium disposition facilities is evaluated in this SPD EIS.DOE alternatives for TRU waste management are evaluated in the *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (WM PEIS) (DOE/EIS-0200-F, May 1997) and the *WIPP Disposal Phase Final Supplemental EIS* (DOE/EIS-0026-S-2, September 1997). WIPP began receiving shipments of TRU waste for permanent disposal on March 26, 1999. As described in Appendix F.8.1, and the Waste Management sections of Chapter 4 of Volume I, it is conservatively assumed that TRU waste would be stored at the candidate sites until 2016, at which time it would be shipped to WIPP in accordance with DOE's plans. Expected TRU waste generated by the proposed facilities is included in the *WIPP Disposal Phase Final Supplemental EIS* cumulative impacts estimates, as well as in *The National TRU Waste Management Plan* (DOE/NTF-96-1204, December 1997).

This SPD EIS, for the purposes of analysis, assumes that Yucca Mountain, Nevada, would be the final disposal site for all immobilized plutonium and MOX spent fuel. As discussed in response FD336–2, DOE is preparing a separate EIS. The MOX spent fuel is included in the Yucca Mountain inventory and is being analyzed in that EIS.

As described in Sections 2.18.3 and 4.28.2.8, additional spent fuel would be produced by using MOX fuel instead of LEU fuel in domestic, commercial reactors. Spent fuel management at the proposed reactor sites is not expected to change dramatically due to the substitution of MOX assemblies for some of the LEU assemblies. Likewise, the additional spent fuel would be a very small fraction of the total that would be managed at the potential geologic repository.

The WM PEIS includes an analysis of the impacts of the long-term storage of 21,600 canisters of vitrified HLW at Hanford and the storage of 4,912 canisters at SRS. The WM PEIS included as part of its cumulative impacts an estimate of HLW generated by the proposed surplus plutonium disposition facilities. As described in Section 2.4.4.2 of this SPD EIS, the surplus plutonium disposition program could result in the generation of up to 395 additional HLW canisters of immobilized plutonium at Hanford or SRS.

FD336–10 General SPD EIS and NEPA Process

DOE does not agree that the *Storage and Disposition PEIS* is a fundamentally flawed document. This SPD EIS references and is tiered from the *Storage and Disposition PEIS* in accordance with applicable provisions of 40 CFR 1502.20.

DOE determined that aqueous processing was not a reasonable alternative for pit conversion under the terms of NEPA because current aqueous processes using existing facilities would produce significant amounts of waste, and aqueous processing would complicate international safeguard regimes. Dry processing was analyzed in the *Storage and Disposition PEIS* and this SPD EIS.

DOE is not including the plutonium-polishing process (a small-scale aqueous process) as part of the pit conversion facility; that process would be part of the MOX facility. DOE would use only dry processes in the pit conversion facility. Section 2.4.3 was revised to include a description of the plutonium-polishing process that would be used in the MOX facility. For this reason, the thermal process for removing gallium may not be needed in the pit

conversion facility (see revised Section 2.4.1.2). Plutonium dioxide is the starting form for the disposition of surplus plutonium for either the immobilization or MOX approach. This EIS analyzes the environmental impacts of converting surplus pits into plutonium dioxide that can be used in either the immobilization or MOX facility. No additional aqueous processing would be necessary to prepare the plutonium dioxide for immobilization.

Section 3.1 defines the ROI for human health risks to the general public from exposure to airborne contaminant emissions as an area within an 80-km (50-mi) radius of the proposed surplus plutonium disposition facilities. The analyses in Appendix J consider the potential contamination of agricultural products, livestock, and fish, and consumption of these products by persons living within an 80-km (50-mi) radius of the candidate sites. The analyses of doses consider bioaccumulation of radioactivity in grain crops, forage, and animals (and the resultant effects on ingestion doses to humans), and all potential dose pathways including direct ingestion, inhalation, external ground exposure, and plume immersion. These analyses indicate that the potential impacts of operating the pit conversion, immobilization, and MOX facilities on agricultural products, livestock, and human health at any of the sites would likely be minor. Section 4.26 and Appendix J were revised to discuss potential impacts of radioactive emissions on agriculture and the Columbia River.

Although cost will be a factor in the decisionmaking process, this SPD EIS contains environmental impact data and does not address the costs associated with the various alternatives. A separate cost report, *Cost Analysis in Support of Site Selection for Surplus Weapons-Usable Plutonium Disposition* (DOE/MD-0009, July 1998), which analyzes the site-specific cost estimates for each alternative, was made available around the same time as the SPD Draft EIS. This report and the *Plutonium Disposition Life-Cycle Costs and Cost-Related Comment Resolution Document* (DOE/MD-0013, November 1999), which covers recent life-cycle cost analyses associated with the preferred alternative, are available on the MD Web site at http://www.doe-md.com and in the public reading rooms at the following locations: Hanford, INEEL, Pantex, SRS and Washington, D.C.

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- *A lack of reasonable alternatives for plutonium pit disassembly/conversion activities;*
- *A lack of a credible cumulative impacts assessment due to the lack of analyses on reasonable, though undesirable, aqueous processes for pit conversion and MOX fuel fabrication;*
- *Failure to incorporate known information prior into the process, such as gallium reduction;*
- *Failure to analyze and report the impacts from proposed activities on the regional economic activities such as Texas Panhandle agriculture and Columbia River fisheries;*
- *Failure to report the full cost of the MOX option."*

10

In the Draft SPDEIS, DOE failed to address these Storage and Disposition PEIS limitations. How can DOE tier the SPDEIS to a fundamentally flawed document?

V. STAND wrote in its scoping comments, in regard to general NEPA requirements:

"The Department of Energy is obligated under NEPA to, "use all practical means, consistent with other essential considerations of national policy" to protect the environment for future generations, assure for all Americans safe, healthful, productive surroundings, preserve our natural heritage, and enhance the quality of renewable resources.

To do this, NEPA requires that DOE identify and analyze "presently unquantified environmental amenities and values" to provide "appropriate consideration in decision making along with economic and technical considerations." The amenities and values that should be identified and analyzed in this EIS, and for which there was an inadequate analysis in the S&D PEIS, include clean water, soil, and air and the productive farmlands and fisheries a high quality environment supports.

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DOE should view its mandate, under NEPA, to assess the relationship between the proposed activities and "the maintenance and long term enhancement of long term productivity in terms of existing economic activities such as agriculture and fisheries. In the PEIS, many commenters wrote that the analysis on the Texas Panhandle Agricultural economy was deeply flawed. STAND agrees with this assessment and requests DOE to analyze impacts of proposed activities on all effected natural resource related economies.

NEPA also requires DOE to assess the environmental impact and adverse environmental effects of its proposed activities on identified amenities and values. In the PEIS, DOE took the approach of analyzing the impacts of proposed activities during normal operations while only assessing the probability of accidents occurring. This strategy is insufficient. STAND is

FD336

FD336–11 **Facility Accidents**

The potential agriculture impacts of the proposed surplus plutonium disposition facilities are described in the Geology and Soils portions of Section 4.26. In the Water Resources portions of Section 4.26, the impacts on surface water (including fisheries) and groundwater have also been described. All activities would be limited to each of the candidate sites, and any impacts to the surrounding areas would be within Federal, State, and local regulatory limits.

As shown in the Facility Accidents sections of Chapter 4 of Volume I and in Appendix K, DOE addresses the environmental and human health consequences of the full range of accidents scenarios for all the alternatives. Similarly, the Transportation sections of Chapter 4, and Appendix L discuss the consequences of transportation accidents.

Because of the very low probability of accidents of the magnitude needed to impact natural-resource-related economies, the consequences would be difficult to calculate with any reasonable degree of accuracy. In the unlikely event of an accident, crops may be contaminated which could affect an agricultural based economy. DOE would thoroughly investigate potentially affected areas and determine the need for interdiction or other specific actions.

The remainder of the comment is addressed in response FD336–10.

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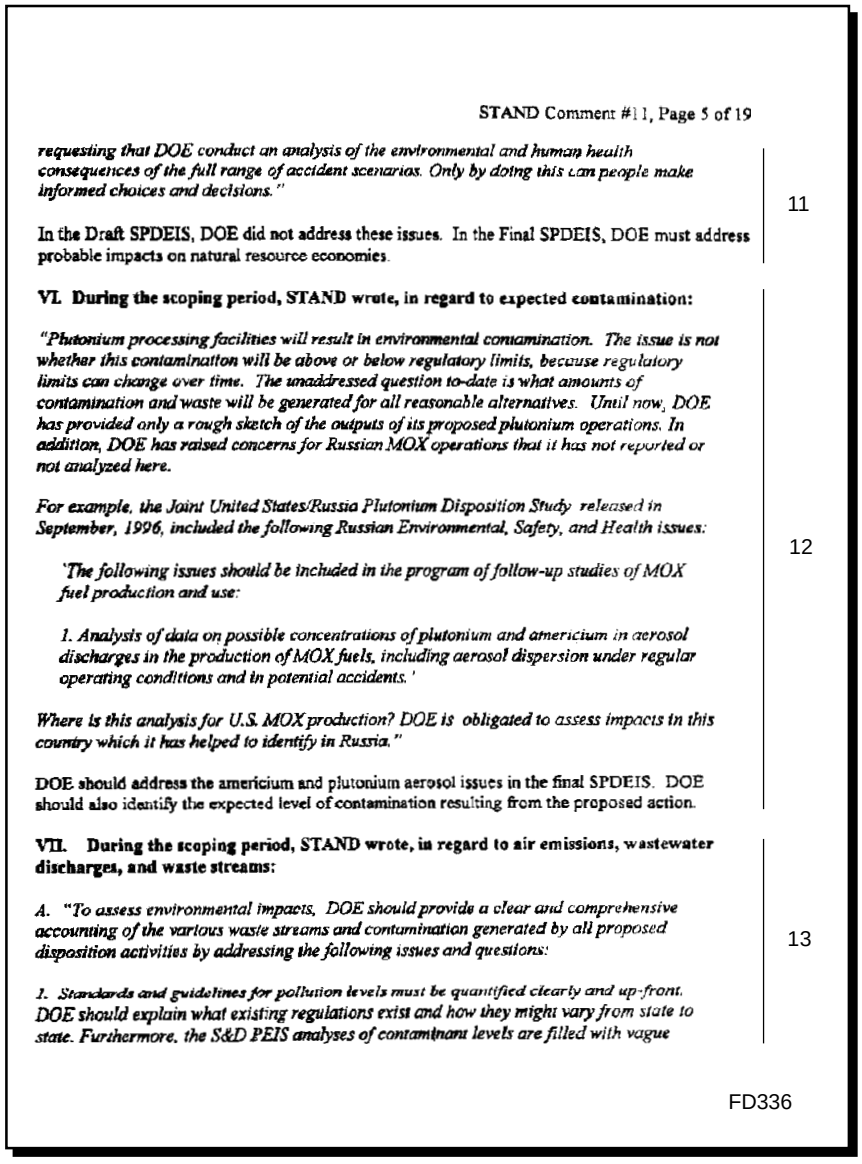

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requesting that DOE conduct an analysis of the environmental and human health consequences of the full range of accident scenarios. Only by doing this can people make informed choices and decisions."

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In the Draft SPDEIS, DOE did not address these issues. In the Final SPDEIS, DOE must address probable impacts on natural resource economies.

VI. During the scoping period, STAND wrote, in regard to expected contamination:

"Plutonium processing facilities will result in environmental contamination. The issue is not whether this contamination will be above or below regulatory limits, because regulatory limits can change over time. The unaddressed question to-date is what amounts of contamination and waste will be generated for all reasonable alternatives. Until now, DOE has provided only a rough sketch of the outputs of its proposed plutonium operations. In addition, DOE has raised concerns for Russian MOX operations that it has not reported or not analyzed here.

For example, the Joint United States/Russia Plutonium Disposition Study released in September, 1996, included the following Russian Environmental, Safety, and Health issues:

12

'The following issues should be included in the program of follow-up studies of MOX fuel production and use:

1. Analysis of data on possible concentrations of plutonium and americium in aerosol discharges in the production of MOX fuels, including aerosol dispersion under regular operating conditions and in potential accidents.'

Where is this analysis for U.S. MOX production? DOE is obligated to assess impacts in this country which it has helped to identify in Russia."

DOE should address the americium and plutonium aerosol issues in the final SPDEIS. DOE should also identify the expected level of contamination resulting from the proposed action.

VII. During the scoping period, STAND wrote, in regard to air emissions, wastewater discharges, and waste streams:

A. "To assess environmental impacts, DOE should provide a clear and comprehensive accounting of the various waste streams and contamination generated by all proposed disposition activities by addressing the following issues and questions:

13

1. Standards and guidelines for pollution levels must be quantified clearly and up-front. DOE should explain what existing regulations exist and how they might vary from state to state. Furthermore, the S&D PEIS analyses of contaminant levels are filled with vague

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FD336–12 **Human Health Risk**

Chapter 4 of Volume I presents the results of the radiological health impacts associated with operational emissions of radionuclides, including plutonium and americium, for each alternative. Radiological release quantities expected from each of the proposed surplus plutonium disposition facilities, including the MOX facility, are presented in Appendix J for normal releases and Appendix K for postulated accidents. All applicable contaminant streams are addressed in the radiological impact analyses.

The accident analysis in this SPD EIS is considered to be bounding and includes the effects of aerosol dispersion under a representative spectrum of possible operational accidents. Inhalation is the most significant dose pathway. Other pathways (ingestion) are controllable through interdiction. No major chemical accidents were identified. As discussed in Appendix K.1.1, additional documentation on hazards and accidents would be developed for each facility during the design and construction process.

The amounts and composition of waste generated for each alternative are quantified in the Waste Management sections in Chapter 4 of Volume I and Appendix H. Generation rates of TRU, low-level, mixed low-level, hazardous, and nonhazardous waste are also provided.

FD336–13 **General SPD EIS and NEPA Process**

DOE assessed the environmental impacts of air emissions, wastewater discharges, and waste streams for this SPD EIS is accordance with well-recognized and accepted procedures. The waste streams generated by the implementation of each alternative are described in the Waste Management sections in Chapter 4 of Volume I and Appendix H. Detailed information is provided in the form of tables and charts, and to the extent possible—the proposed action being of a highly technical nature—the text is presented in "common English." Chapter 5 includes a description of existing regulations and a list of State regulations for the candidate sites. Furthermore, the document is organized in accordance with 40 CFR 1502.10, and reader aids such as a glossary, a list of acronyms, and conversion charts are provided. Also available to the public are those data reports used as source material for the calculation of potential environmental impacts.

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descriptions like "minimum," "not expected," "unlikely," and "background levels," and are presented in a format which is reader unfriendly."

13

The Draft SPDEIS is a cumbersome document that violates every numerous NEPA requirements to present information in a clear and concise manner.

B. "The public has a right to know what is expected at these facilities. To provide an adequate analysis that addresses public concerns, DOE must:

- *Be sure that subjective terminology is supported with quantifiable information, and the limitations of DOE's data should be identified."*

14

DOE did not describe the limitations of its data in the Draft SPDEIS and should do so in the Final SPDEIS.

- *"Fully identify all expected contaminant and waste streams in the main document, and not just solely in source materials or referenced documents. The primary document should provide the fundamental information necessary for people to make decisions.*
- *Identify the expected levels of contaminant deposition and emissions."*

15

In the Draft SPDEIS, DOE failed to identify all expected contaminant streams in any document because it excluded beryllium emissions as an impact. In addition, DOE used its source documents to send people on a paper chase for pertinent information. For example, on page J-4 DOE wrote that, "source term data for radiological releases, stack heights, and release locations are provided in the data reports for the pit conversion, immobilization, and MOX facilities." In other words, the Draft SPDEIS does not provide any data on something as basic as expected quantities of radioactive air pollutants. In the final SPDEIS, DOE must provide important information in the main document, and it must do so in a reader-friendly format as required by NEPA.

- *"Identify known health effects of exposures to contaminants and the levels at which these health effects are known to occur."*

16

DOE did not address this issue in the Draft SPDEIS. Instead, DOE compared emissions data to regulatory requirements. In the final SPDEIS, DOE must discuss the potential health effects of the pollutants that will result from its proposed action.

C. "The waste streams quantified within the S&D PEIS did not sufficiently define the waste composition or disposal options. The SPDEIS provides an opportunity to answer questions such as:

17

What is the alternative to waste disposal at permanent repositories? If WIPP opens, is there

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In order to produce a document that is understandable and of a manageable size, DOE chose to place some technical information in supporting reports. DOE believes that this SPD EIS reflects an appropriate balance between detailed technical information desired by some reviewers and information that is understandable by the general public. Supporting reports are available in the public reading rooms near the sites, as described in the NOA for the SPD Draft EIS. A copy of the NOA is provided in Appendix A.

FD336–14 General SPD EIS and NEPA Process

All the alternatives have been evaluated using uniform methods and data allowing for a fair comparison. Limitations of the data on air emissions, wastewater discharges, and waste streams are discussed in Appendix F, and the results of the impacts analyses for these areas are discussed in Appendixes G and H, respectively. The accident analyses are based on calculations relevant to hypothetical sequences of events and models of their effects. The models provide estimates of the frequencies, source terms, pathways for dispersion, exposures, and effects on human health and the environment that are as realistic as possible within the scope of the analysis. In many cases, a paucity of experience with the accidents postulated led to uncertainty in the calculation of their consequences and frequencies. This prompted the use of models for input values that yield conservative estimates of consequence and frequency, so that the projected risks are more likely to be overestimated than underestimated.

FD336–15 Human Health Risk

Section 2.4.1.1 was revised to discuss solid beryllium and its presence in the pit conversion facility, and Appendix H was revised to include a discussion of solid beryllium in the pit disassembly and conversion waste streams. Appendix J was revised to include source term data on airborne and liquid releases of radioactive isotopes. Appendix G was revised to include stack data. No airborne emissions of beryllium are expected from anticipated facility operations.

FD336–16 **Human Health Risk**

The discussion of hazardous chemical impacts in Appendix F.10.2.1 was revised to include more information on the types of health effects that could result from exposures to hazardous chemicals and to provide more details on the methodology used to calculate these effects, both carcinogenic and noncarcinogenic. Appendix F.1.2.1 was also revised to include a discussion on how the most stringent standard or guideline relates to human health. The expanded discussions clarify the meaning and significance of the potential impacts associated with exposure to airborne releases, including hazardous air pollutants and criteria air pollutants, that are presented in the Human Health Risk and Air Quality and Noise sections in Chapter 4 of Volume I.

FD336–17 **Waste Management**

As discussed in response FD336–9, WIPP is open and can accommodate the amount of TRU waste expected from the proposed surplus plutonium disposition facilities. Further, the response discusses Yucca Mountain and its ability to accept MOX spent fuel. Response FD336–2 discusses the RAND report.

As described in Appendix H, operation of the pit conversion, immobilization, and MOX facilities would be expected to generate LLW that includes used equipment, wipes, protective clothing, and solidified inorganic solutions. LLW would be contaminated with TRU isotopes (primarily plutonium) at concentrations lower than 100 nCi and would generally not contain appreciable contamination by other isotopes. An exception is that operation of the pit conversion facility would generate LLW that includes tritium. As described in Appendix F.8, by definition TRU waste contains more than 100 nCi of alpha-emitting transuranic isotopes, with half-lives greater than 20 years, per gram of waste. Transuranic isotopes include isotopes of plutonium. Mixed TRU waste is TRU waste that contains hazardous components regulated under RCRA. LLW can contain transuranic isotopes in concentrations of no more than 100 nCi of waste. Mixed LLW is LLW that contains hazardous components regulated under RCRA. As described in the introduction to Appendix H, only a very small portion of the TRU waste would leave the

proposed surplus plutonium disposition facilities as a liquid. Most of the TRU waste generated by the proposed facilities would be solid wastes (wipes, used containers and packaging materials, and lead- lined rubber gloves), with surfaces contaminated by plutonium dioxide. All TRU waste would be appropriately placed in containers before leaving the proposed facilities. Therefore, it is unlikely that TRU waste would be released to the environment.

Plutonium is extremely immobile in the environment. Plutonium in soils is associated with organics, sesquioxides (soil coatings), clay particles, carbonates, and silicates. Studies have shown that most plutonium deposited on the ground remains in the upper soil horizons. Therefore, contamination of underground sources of water by deposition of plutonium on the soil is unlikely. The potential for plutonium contamination of the Ogallala aquifer was examined in the *Environmental Assessment for Interim Storage of Plutonium at Pantex* (DOE/EA-0812, January 1994). That document shows that no accident or routine operating condition that could result in a plutonium release could be identified with a probability greater than $1.0x10^{-6}$/yr of having an impact on the aquifer. Actual mobility depends on the form of the plutonium released (including chemical compound and valence state) and the conditions of the environment into which the plutonium is released (e.g., eH and pH, and the presence of materials to which the plutonium may attach).

DOE is establishing an internet database pursuant to the terms of a lawsuit settlement (*Natural Resources Defense Council et al. v. Bill Richardson, Secretary of Energy, et al.*, Civ. No. 97-936(ss)). The database will include information on waste at each site by program office; specific information on volume and mass of radioactive materials, chemical constituents, radioactivity of materials, and disposition plans will be provided. DOE expects that this database will be operational in January 2000 and will be maintained for 5 years.

Most facility accidents would not involve the release of significant quantities of materials from the facility, and therefore, would not produce contamination outside the building. Likewise, most transportation accidents would not result in releases of radioactive materials to the environment. Due

to the immense variability of the accident scenarios, and the difficulty in estimating the amount of material that would be contaminated with radioactive and hazardous constituents, waste streams could not be reasonably estimated for the accident scenarios. If an accidental release occurred, the source of the release would be promptly contained and any significant contamination remediated. Incident response and contaminant remediation would be performed in accordance with all applicable regulations, as well as spill prevention and emergency response plans.

DOE does not decide which wastes are nonhazardous and which are hazardous. The allowable amounts of contaminants that may be present in nonhazardous waste are determined by Federal and State regulations. For example, as described in the regulations implementing RCRA, wastes are determined to be hazardous if they exhibit the characteristics of ignitability, corrosivity, reactivity or toxicity as defined in the regulations, or are otherwise determined to pose a hazard.

Although it is inevitable that regulations may change over time, issues such as how the regulatory environment will evolve are speculative and therefore are beyond the scope of this SPD EIS. If regulatory requirements relevant to the surplus plutonium disposition program change, however, DOE, will comply with those new requirements.

Earlier consideration regarding a possible HLW repository in Deaf Smith County, Texas, is unrelated to the proposed action. In December 1987, the NWPA was amended by the U.S. Congress to direct DOE to suspend characterization work at all sites except the Yucca Mountain Site in Nevada.

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sufficient space there for the new quantities of TRU waste? If not, what will be the interim and permanent fate of new TRU wastes?

Likewise, will Yucca Mountain, if it opens, have sufficient space for MOX spent fuel assemblies? Is Yucca Mountain a suitable site considering the findings in the RAND report?

What will the composition of low level waste be for each facility, based on existing experience?

What will be the concentration of transuranic elements in low level, TRU waste, and mixed low level and TRU wastes?

Of the chemicals in the mixed TRU wastes, what will be the effect of these chemicals in terms of the mobility of transuranics in the soil? What will be the chemical composition of mixed TRU waste and how will this effect Pu transport if it contaminates soil and water? 17

What will the projected waste stream be for various accident scenarios?

For nonhazardous wastes, what are the allowable tolerance for contaminants?

Will regulations change over time, much as they are being proposed for Yucca Mtn., and just as DOE changed the definition of TRU waste in 1984?

What is the possibility, especially if plutonium processing facilities are located at Pantex, of DOE revisiting the proposal for a high level (or other nuclear waste) waste repository in Deaf Smith County, Texas?"

DOE should address these unanswered questions in the final SPDEIS.

VIII. During the scoping period, STAND wrote, in regard to accident scenarios:

A. "In the S&D PEIS, DOE analyzed a limited set of accident scenarios, reported them in a reader unfriendly format, and only reported cancer risks. Although the environmental and human health risks were different at each site, DOE failed to summarize the comparative risks across sites. For the SPDEIS to be credible, DOE must make great improvements to its assessments of accident scenarios. Even European MOX fuel fabricators assess a greater spectrum of accident scenarios and health risks than DOE has to date. These include breach and/or crash of a glove box, onsite floods, and estimated dose to public for various accident scenarios. 18

DOE should have sufficient data based on past accidents at Rocky Flats, Hanford, Savannah River Site, Pantex, and INEEL to estimate the expected range of contamination possible under various accident scenarios. DOE should then estimate the comparative doses and the possible health and environmental consequences for each site, and compare the sites in a

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FD336–18 **Facility Accidents**

This SPD EIS presents accident results in terms of point estimates for consequence and qualitative frequency ranges for frequency consistent with the guidance in *Recommendations for the Preparations of Environmental Assessments and Environmental Impact Statement* (DOE Office of NEPA Oversight, May 1993). In general, the postulated beyond-design-basis accidents are significantly more severe than any accident that has occurred within the experience base of DOE.

This EIS provides several levels of detail in order to be useful to a variety of interested parties. Section 2.18 summarizes the limiting design basis accident for each candidate site by alternative. In addition, each alternative analyzed in Chapter 4 of Volume I provides a discussion of the limiting beyond-design basis accident. More detailed accident result information is provided in Chapter 4. Although the format of the accident tables is the same among alternatives, there is no explicit redundancy in the information contained in the tables. Appendix K presents a greater depth of detail, including additional accident result tables for average meteorology (as opposed to conservative meteorology, which was used for the formal results in Chapter 4).

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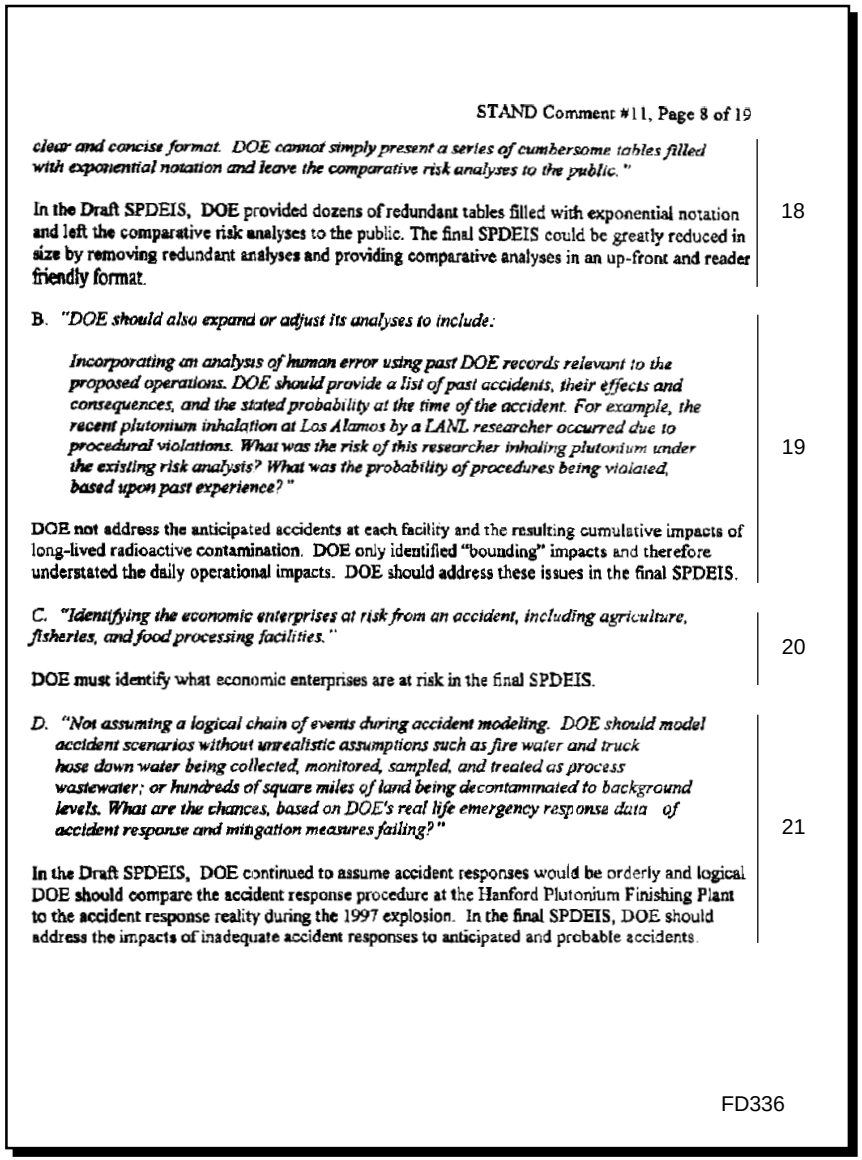

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clear and concise format. DOE cannot simply present a series of cumbersome tables filled with exponential notation and leave the comparative risk analyses to the public."

In the Draft SPDEIS, DOE provided dozens of redundant tables filled with exponential notation and left the comparative risk analyses to the public. The final SPDEIS could be greatly reduced in size by removing redundant analyses and providing comparative analyses in an up-front and reader friendly format. 18

B. *"DOE should also expand or adjust its analyses to include:*

Incorporating an analysis of human error using past DOE records relevant to the proposed operations. DOE should provide a list of past accidents, their effects and consequences, and the stated probability at the time of the accident. For example, the recent plutonium inhalation at Los Alamos by a LANL researcher occurred due to procedural violations. What was the risk of this researcher inhaling plutonium under the existing risk analysis? What was the probability of procedures being violated, based upon past experience?" 19

DOE not address the anticipated accidents at each facility and the resulting cumulative impacts of long-lived radioactive contamination. DOE only identified "bounding" impacts and therefore understated the daily operational impacts. DOE should address these issues in the final SPDEIS.

C. *"Identifying the economic enterprises at risk from an accident, including agriculture, fisheries, and food processing facilities."* 20

DOE must identify what economic enterprises are at risk in the final SPDEIS.

D. *"Not assuming a logical chain of events during accident modeling. DOE should model accident scenarios without unrealistic assumptions such as fire water and truck hose down water being collected, monitored, sampled, and treated as process wastewater; or hundreds of square miles of land being decontaminated to background levels. What are the chances, based on DOE's real life emergency response data of accident response and mitigation measures failing?"* 21

In the Draft SPDEIS, DOE continued to assume accident responses would be orderly and logical. DOE should compare the accident response procedure at the Hanford Plutonium Finishing Plant to the accident response reality during the 1997 explosion. In the final SPDEIS, DOE should address the impacts of inadequate accident responses to anticipated and probable accidents.

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FD336–19 **Facility Accidents**

Potential accidents with a range of frequencies and consequences were addressed in this SPD EIS in accordance with DOE's NEPA guidance. Many of the accidents in Appendix K reflect potential human error and procedural violations. The accident history sections in Chapter 3 of Volume I summarize the existing data on incidents at the candidate sites.

In response to the commentor's concern, a search of the DOE occurrence reporting database for 1997 and 1998 was performed, which yielded 13 occurrences at LANL categorized under the heading "radiological issues." Of these 13 occurrences, three resulted in dose estimates ranging from 0.007 to 1.2 rem CEDE, the remainder were below measurable levels based on nasal smears. This two-year history is more recent than the five-year history summarized in Table 3–62, which documents radiation doses to onsite workers at LANL for the calendar years 1991–1995. The two-year data summarized above falls within the dose range of Table 3–62, substantiating its validity in characterizing anticipated exposures in general.

The impacts from daily surplus plutonium disposition operations are considered in the Human Health Risk sections in Chapter 4 of Volume I. Because nonradiological consequences dominate accident risks for high frequency accidents, worker accident risk from nonradiological sources was estimated using existing DOE injury and fatality rates and summarized for each alternative in the Facility Accidents sections of Chapter 4. It is not reasonable to postulate the chronic occurrence of accidents exceeding permissible release limits that might result in significant cumulative impacts from long-lived radioactive contamination. This is because regulatory action by DOE, EPA, and/or NRC would be taken in response to any such accident.

FD336–20 **Socioeconomics**

This comment is addressed in response FD336–11.

FD336–21 **Facility Accidents**

As discussed in Appendix K.1.4.1, consequences were developed using conservative assumptions and methods without regard for or without taking credit for adequate emergency response.

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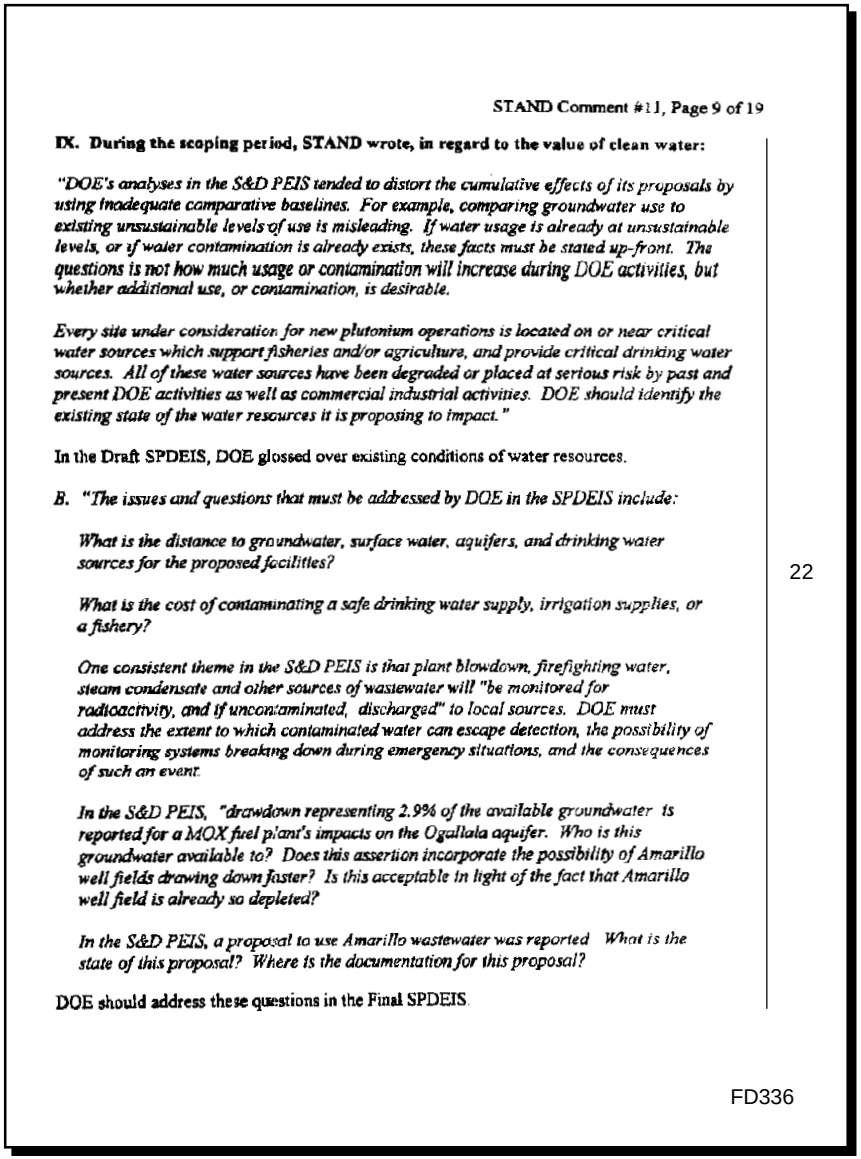

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IX. During the scoping period, STAND wrote, in regard to the value of clean water:

"DOE's analyses in the S&D PEIS tended to distort the cumulative effects of its proposals by using inadequate comparative baselines. For example, comparing groundwater use to existing unsustainable levels of use is misleading. If water usage is already at unsustainable levels, or if water contamination is already exists, these facts must be stated up-front. The questions is not how much usage or contamination will increase during DOE activities, but whether additional use, or contamination, is desirable.

Every site under consideration for new plutonium operations is located on or near critical water sources which support fisheries and/or agriculture, and provide critical drinking water sources. All of these water sources have been degraded or placed at serious risk by past and present DOE activities as well as commercial industrial activities. DOE should identify the existing state of the water resources it is proposing to impact."

In the Draft SPDEIS, DOE glossed over existing conditions of water resources.

B. "The issues and questions that must be addressed by DOE in the SPDEIS include:

What is the distance to groundwater, surface water, aquifers, and drinking water sources for the proposed facilities?

22

What is the cost of contaminating a safe drinking water supply, irrigation supplies, or a fishery?

One consistent theme in the S&D PEIS is that plant blowdown, firefighting water, steam condensate and other sources of wastewater will "be monitored for radioactivity, and if uncontaminated, discharged" to local sources. DOE must address the extent to which contaminated water can escape detection, the possibility of monitoring systems breaking down during emergency situations, and the consequences of such an event.

In the S&D PEIS, "drawdown representing 2.9% of the available groundwater is reported for a MOX fuel plant's impacts on the Ogallala aquifer. Who is this groundwater available to? Does this assertion incorporate the possibility of Amarillo well fields drawing down faster? Is this acceptable in light of the fact that Amarillo well field is already so depleted?

In the S&D PEIS, a proposal to use Amarillo wastewater was reported What is the state of this proposal? Where is the documentation for this proposal?

DOE should address these questions in the Final SPDEIS.

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FD336–22 **Water Resources**

DOE acknowledges the commentor's concerns regarding the potential for impacts to water resources at Pantex Section 3.4.7.2 describes potential and past DOE water use, use by the city of Amarillo, and irrigation use in Carson County. Operation of the pit conversion and MOX facilities is estimated to increase water use by 116 million l/yr (30.6 million gal/yr). This water use would still be a small portion of the water used by the city of Amarillo (0.5 percent) and that used by irrigation in Carson County, and would be less than the water used by Pantex in 1991. Although additional water use at Pantex may produce some localized drawdown of the aquifer near Pantex supply wells, this water use would not impact the overall conditions in the Ogallala aquifer. DOE is not proposing to use water from the Hollywood Road Wastewater Treatment Plant at this time; however, this measure is a viable option and could be used to mitigate impacts of additional water usage in the future.

Analyses presented in Section 4.26.3.2 indicate that there would be no discernible impacts to surface water or groundwater quality at Pantex from normal operation of the proposed surplus plutonium disposition facilities. There would be no discernible contamination of aquatic biota (fish) or drinking water, either from the deposition of minute quantities of airborne contaminants into small water bodies or from potential wastewater releases. Therefore, it is estimated that no measurable component of the public dose would be attributable to liquid pathways. It is not possible to estimate the cost of cleanup associated with contamination of drinking water supplies, irrigation supplies, or fisheries.

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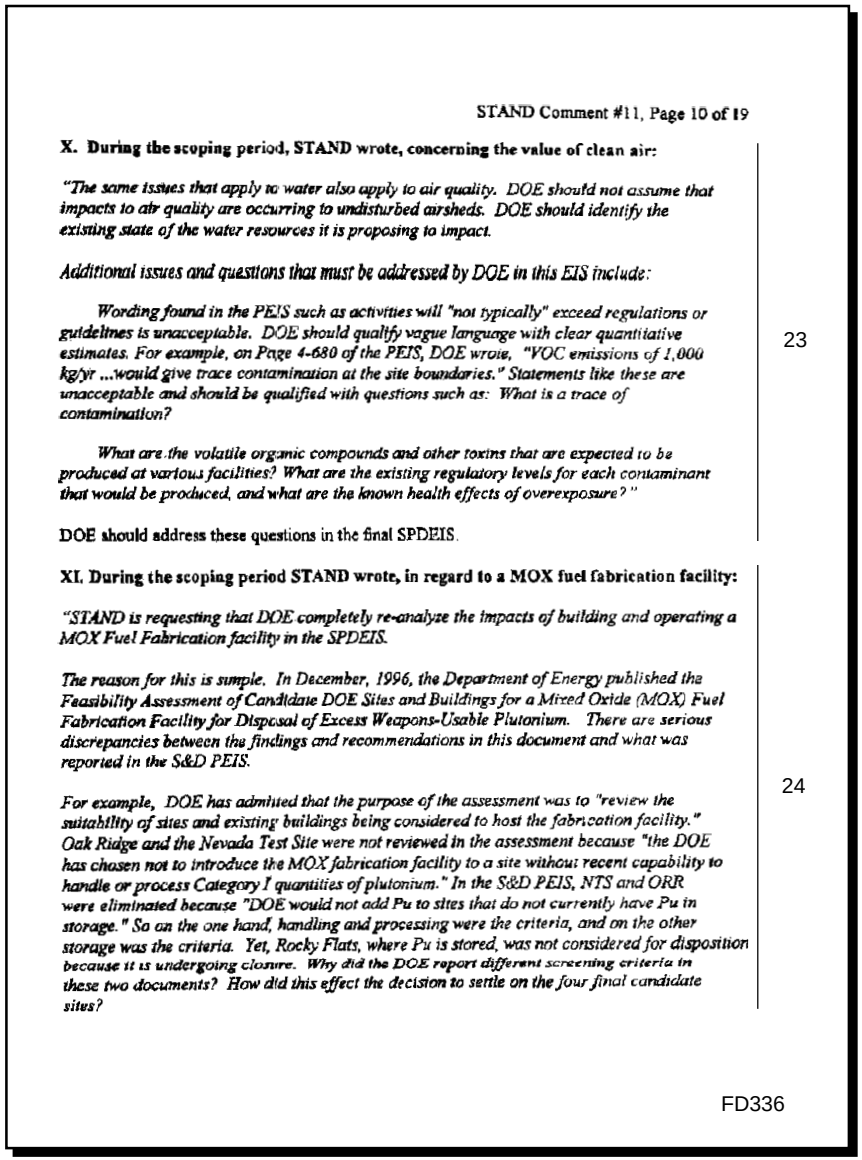

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X. During the scoping period, STAND wrote, concerning the value of clean air:

"The same issues that apply to water also apply to air quality. DOE should not assume that impacts to air quality are occurring to undisturbed airsheds. DOE should identify the existing state of the water resources it is proposing to impact.

Additional issues and questions that must be addressed by DOE in this EIS include:

Wording found in the PEIS such as activities will "not typically" exceed regulations or guidelines is unacceptable. DOE should qualify vague language with clear quantitative estimates. For example, on Page 4-680 of the PEIS, DOE wrote, "VOC emissions of 1,000 kg/yr ...would give trace contamination at the site boundaries." Statements like these are unacceptable and should be qualified with questions such as: What is a trace of contamination?

What are the volatile organic compounds and other toxins that are expected to be produced at various facilities? What are the existing regulatory levels for each contaminant that would be produced, and what are the known health effects of overexposure?"

23

DOE should address these questions in the final SPDEIS.

XI. During the scoping period STAND wrote, in regard to a MOX fuel fabrication facility:

"STAND is requesting that DOE completely re-analyze the impacts of building and operating a MOX Fuel Fabrication facility in the SPDEIS.

The reason for this is simple. In December, 1996, the Department of Energy published the Feasibility Assessment of Candidate DOE Sites and Buildings for a Mixed Oxide (MOX) Fuel Fabrication Facility for Disposal of Excess Weapons-Usable Plutonium. There are serious discrepancies between the findings and recommendations in this document and what was reported in the S&D PEIS.

For example, DOE has admitted that the purpose of the assessment was to "review the suitability of sites and existing buildings being considered to host the fabrication facility." Oak Ridge and the Nevada Test Site were not reviewed in the assessment because "the DOE has chosen not to introduce the MOX fabrication facility to a site without recent capability to handle or process Category I quantities of plutonium." In the S&D PEIS, NTS and ORR were eliminated because "DOE would not add Pu to sites that do not currently have Pu in storage." So on the one hand, handling and processing were the criteria, and on the other storage was the criteria. Yet, Rocky Flats, where Pu is stored, was not considered for disposition because it is undergoing closure. Why did the DOE report different screening criteria in these two documents? How did this effect the decision to settle on the four final candidate sites?

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FD336–23 **Air Quality and Noise**

The text referred to by the commentor was from the *Storage and Disposition PEIS.* This SPD EIS has attempted to clarify the air quality concerns associated with operating the proposed surplus plutonium disposition facilities. The air quality impacts associated with construction and operation emissions of air pollutants have been quantified for each alternative in Chapter 4 of Volume I (e.g., see Table 4–52). As shown in these tables, the amount of air pollution associated with the operations of the proposed facilities is generally small when compared to the existing site concentrations, and applicable standards or guidelines. A detailed discussion of how these impacts were calculated is included in Appendix G for each of the proposed surplus plutonium facilities at the candidate sites. Air pollutant emission rates are given for each proposed facility in kilograms per year, and rates are compared with the appropriate air quality standards and guidelines.

FD336–24 **MOX Approach**

DOE understands there could be confusion regarding various documents that address related topics. In the *Storage and Disposition PEIS*, the proposed action for plutonium disposition was to select a disposition strategy. Therefore, the decisions made were of a programmatic nature, taking into consideration the major programmatic activities at various candidate sites. Once the decision was made in the *Storage and Disposition PEIS* ROD to proceed with the hybrid and immobilization-only approaches to surplus plutonium disposition and focus on the selected candidate sites, the next step was to determine the specific DOE site(s) for constructing and operating the proposed facilities and the disposition approach and technologies. Because the decisions for this SPD EIS are site and facility specific, the decision criteria are based on the candidate site's ability to handle up to 50 t (55 tons) of surplus plutonium using the selected disposition approaches, as well as its ability to house the needed facilities.

As discussed in the *Pit Disassembly and Conversion Demonstration EA* (DOE/EA-1207, August 1998), several national laboratories, including ANL-W, LLNL, LANL, and ORNL, have ongoing R&D projects related to the surplus plutonium disposition program that involve the use of small

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In the Draft SPDEIS, DOE did not address the changes that had occurred since issuance of the S&D PEIS. Since the ROD for the PEIS was issued, DOE has proceeded with MOX research and development that is centered at Oak Ridge and Los Alamos. Oak Ridge is handling and processing small amounts of plutonium in the R&D program. This contradicts the criteria for removing Oak Ridge as a plutonium processing candidate.

At Los Alamos, DOE is proceeding to upgrade plutonium storage facilities, yet these upgrades are never addressed in the Draft SPDEIS. Los Alamos personnel also stated, at the MOX Industry Conference in Atlanta, that the LANL MOX program has been approved by lab officials for an indefinite period. What capabilities are being developed at LANL that DOE did not report in the Draft SPDEIS? 24

Serious discrepancies between programmatic realities and the Draft SPDEIS and related documents continue to undermine the integrity of DOE's NEPA process. These discrepancies should be addressed in the Final SPDEIS.

B. *"In part two of the assessment, three unique attributes to Weapons grade plutonium were identified that were not reported or analyzed in the S&D PEIS:*

1. The different isotopic ratio–lower ratio of Pu-240–in weapons grade plutonium compared to weapons usable, reactor grade plutonium creates more stringent criticality limits with subsequent negative impacts on the economics and risks of the MOX option. In DOE's reevaluation of the MOX option, it must answer the following questions, as they pertain to the Plutonium isotopic ratio issue: 25

a. What additional costs are incurred during MOX fuel fabrication that have not been reported?

b. What additional criticality risks are incurred during MOX fuel fabrication that have not been reported?

c. What additional consequences are possible in the event of a plutonium release?

2. Gallium concentrations will have to be below 100 parts per million for the plutonium oxide feed. DOE has not explained in a decision document why gallium reduction must occur and the processes required to reduce it. The questions DOE must answer as they pertain to gallium (and other impurities) are: 26

a. What additional costs are incurred to prepare plutonium oxide for the MOX fuel feed that is not found in the immobilization option and which has not been reported?

b. What additional risks to workers and the environment are created with gallium reduction processes?

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quantities of plutonium. ANL–W, LANL, LLNL, as well as Hanford and SRS, are candidates for lead assembly activities in the SPD EIS because they have existing capabilities and facilities that could support these activities. ANL–W and ORNL are candidates for postirradiation examination in the SPD EIS because they have existing capabilities and facilities that could support these activities.

The LANL storage facilities mentioned by the commentor are covered under the *Site-Wide Environmental Impact Statement on the Continued Operation of the Los Alamos National Laboratory* (DOE/EIS-0238, January 1999) and are not part of the surplus plutonium disposition program. All of the MOX fuel activities being pursued at LANL were discussed in the *Pit Disassembly and Conversion Demonstration EA*. The interrelationships of the referenced documents are described in Section 1.8 of this SPD EIS.

FD336–25 **MOX Approach**

Reactor-grade and weapons-grade plutonium are chemically indistinguishable. The difference is isotopic: there is less plutonium 239 (and therefore more plutonium 240) in reactor-grade plutonium than in plutonium that was produced for use in weapons. However, since plutonium 240 is not fissile, it is the amount of plutonium 239 that dominates criticality concerns. This SPD EIS analyzes the potential impacts of the proposed actions. Therefore, analyses of criticality risks during MOX fuel fabrication, as well as all other SPD EIS analyses, reflect the isotopic content, plutonium concentrations, physical attributes, and other parameters specific to the materials, facilities, and sites under consideration. The reactor-specific analyses in the revised Section 4.28 for both routine operation and postulated accidents use source terms that reflect the proposed MOX fuel component of the reactor cores.

Although cost will be a factor in the decisionmaking process, this SPD EIS contains environmental impact data and does not address the costs associated with the various alternatives. Response FD336–10 discusses the separate cost reports associated with this EIS.

FD336–26 Plutonium Polishing and Aqueous Processing

The degree of removal of impurities would depend on the MOX fuel specification. Gallium and tramp impurities would not have to be removed if the plutonium dioxide from the pit conversion facility were going to be used in the immobilization facility. DOE has included plutonium polishing as a component of the MOX facility to ensure adequate gallium and impurity removal from the plutonium dioxide. Section 2.4.3 and the hybrid alternatives analyses in Chapter 4 of Volume I were revised to include a discussion of plutonium polishing.

Response FD336–10 discusses the separate cost reports associated with this EIS. The additional risks associated with plutonium polishing in the MOX facility were added to the Human Health Risk and Facility Accidents sections of Chapter 4 (e.g., see Sections 4.3.2.4 and 4.3.2.5). Gallium presence in appreciable concentrations is a concern both in the fabrication of MOX fuel through possible interference of the sintering process of uranium and plutonium oxides, and in fuel performance by increasing the potential for corrosion and embrittlement of the fuel cladding.

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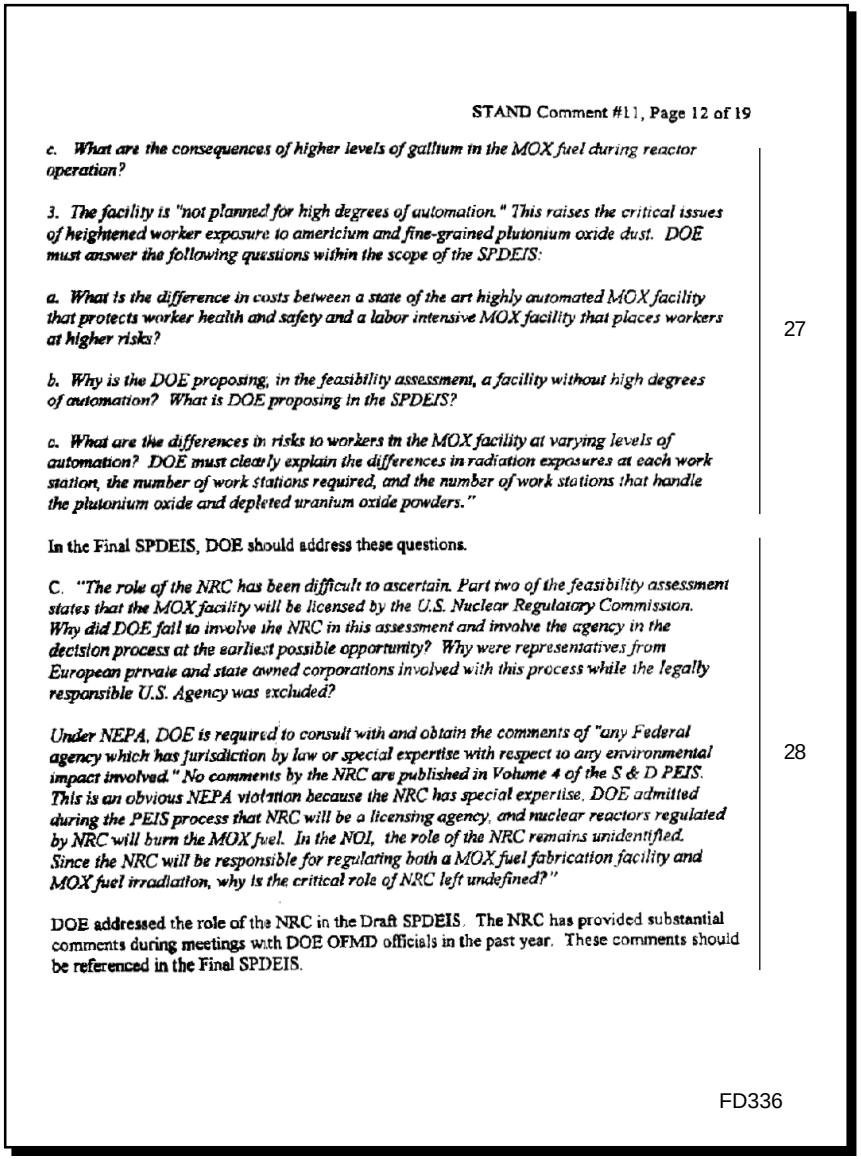

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c. What are the consequences of higher levels of gallium in the MOX fuel during reactor operation?

3. The facility is "not planned for high degrees of automation." This raises the critical issues of heightened worker exposure to americium and fine-grained plutonium oxide dust. DOE must answer the following questions within the scope of the SPDEIS:

a. What is the difference in costs between a state of the art highly automated MOX facility that protects worker health and safety and a labor intensive MOX facility that places workers at higher risks?

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b. Why is the DOE proposing, in the feasibility assessment, a facility without high degrees of automation? What is DOE proposing in the SPDEIS?

c. What are the differences in risks to workers in the MOX facility at varying levels of automation? DOE must clearly explain the differences in radiation exposures at each work station, the number of work stations required, and the number of work stations that handle the plutonium oxide and depleted uranium oxide powders."

In the Final SPDEIS, DOE should address these questions.

C. *"The role of the NRC has been difficult to ascertain. Part two of the feasibility assessment states that the MOX facility will be licensed by the U.S. Nuclear Regulatory Commission. Why did DOE fail to involve the NRC in this assessment and involve the agency in the decision process at the earliest possible opportunity? Why were representatives from European private and state owned corporations involved with this process while the legally responsible U.S. Agency was excluded?*

Under NEPA, DOE is required to consult with and obtain the comments of "any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved." No comments by the NRC are published in Volume 4 of the S & D PEIS. This is an obvious NEPA violation because the NRC has special expertise. DOE admitted during the PEIS process that NRC will be a licensing agency, and nuclear reactors regulated by NRC will burn the MOX fuel. In the NOI, the role of the NRC remains unidentified. Since the NRC will be responsible for regulating both a MOX fuel fabrication facility and MOX fuel irradiation, why is the critical role of NRC left undefined?"

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DOE addressed the role of the NRC in the Draft SPDEIS. The NRC has provided substantial comments during meetings with DOE OFMD officials in the past year. These comments should be referenced in the Final SPDEIS.

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FD336–27 **Human Health Risk**

DOE acknowledges the commentor's concerns about occupational exposures related to the degree of automation of the MOX facility. Appropriate automation would be used at the MOX facility and worker exposures would be kept as low as is reasonably achievable. DCS's experience in Europe shows that worker exposure is much lower than that reported in the SPD Draft EIS. As shown in the Human Health Risk sections in Chapter 4 of Volume I related to the MOX facility and in Appendix J (e.g., Table J–11), the average worker dose was revised to 65 mrem/yr from 500 mrem/yr. The cost difference between a highly automated MOX facility and the facility design presented in this SPD EIS has not been quantified.

The analyses presented in Chapter 4 indicate that the MOX facility would be operated in a manner that would minimize worker exposure. It is not possible at this point to describe every glovebox station in the MOX facility because its design is still evolving; however, it is known that certain processes (e.g., plutonium dioxide/depleted uranium dioxide blending) could result in higher occupational exposures than others. As explained in Chapter 4 and Appendix J, doses for all operations would be kept well below the Federal limit of 5,000 mrem/yr, and an ALARA program would ensure that doses are reduced to levels that are as low as is reasonably achievable.

FD336–28 **NRC Licensing**

NRC's role is defined. The MOX facility would be licensed by NRC under 10 CFR 70, *Domestic Licensing of Special Nuclear Material*. NRC will continue to be responsible for licensing the reactors that would use MOX fuel, and as such would have to approve the use of MOX fuel through the license amendment process (10 CFR 50.90). Early in the preparation of the *Storage and Disposition PEIS* and this SPD EIS, DOE invited NRC to be a cooperating agency for the surplus weapons-usable fissile materials program. NRC declined the offer in favor of being a commenting agency. DOE is conducting regular meetings with NRC on the MOX approach, including fuel design and qualification.

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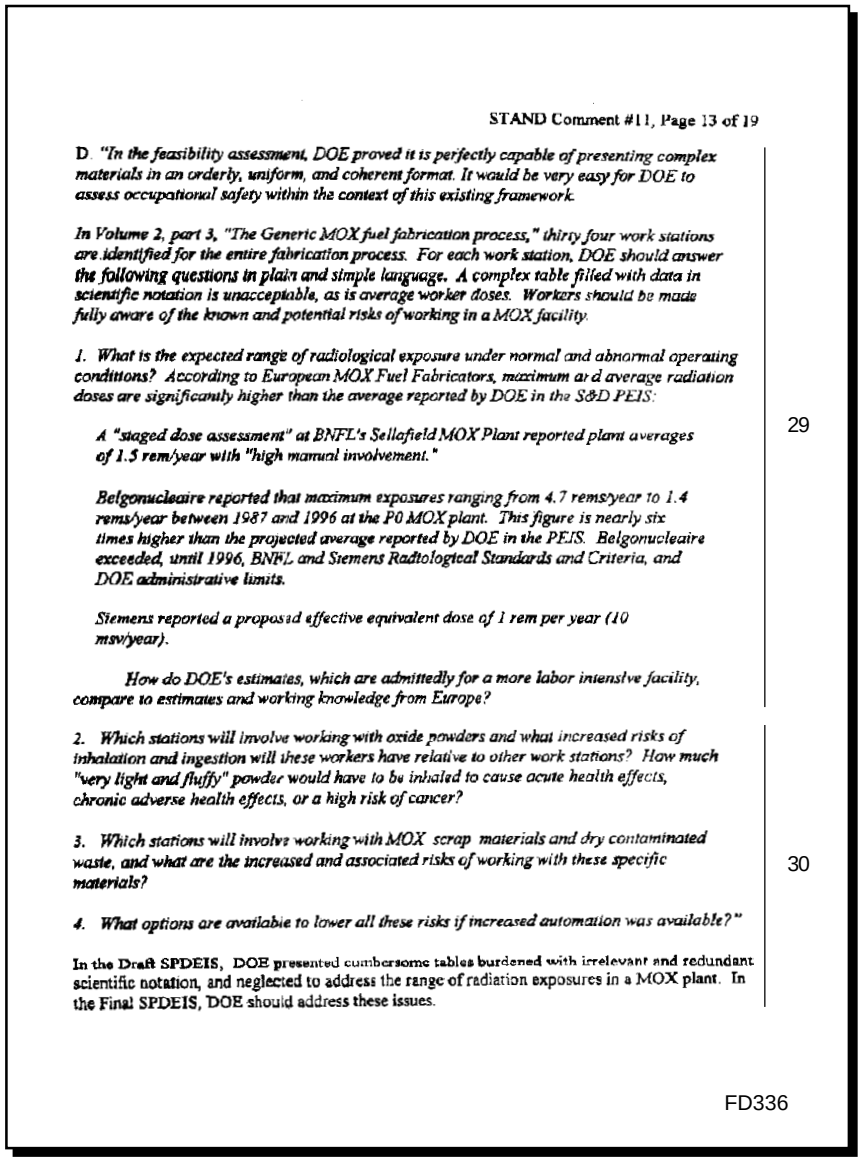

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D. *"In the feasibility assessment, DOE proved it is perfectly capable of presenting complex materials in an orderly, uniform, and coherent format. It would be very easy for DOE to assess occupational safety within the context of this existing framework.*

In Volume 2, part 3, "The Generic MOX fuel fabrication process," thirty four work stations are identified for the entire fabrication process. For each work station, DOE should answer the following questions in plain and simple language. A complex table filled with data in scientific notation is unacceptable, as is average worker doses. Workers should be made fully aware of the known and potential risks of working in a MOX facility.

1. What is the expected range of radiological exposure under normal and abnormal operating conditions? According to European MOX Fuel Fabricators, maximum and average radiation doses are significantly higher than the average reported by DOE in the S&D PEIS:

A "staged dose assessment" at BNFL's Sellafield MOX Plant reported plant averages of 1.5 rem/year with "high manual involvement."

Belgonucleaire reported that maximum exposures ranging from 4.7 rems/year to 1.4 rems/year between 1987 and 1996 at the PO MOX plant. This figure is nearly six times higher than the projected average reported by DOE in the PEIS. Belgonucleaire exceeded, until 1996, BNFL and Siemens Radiological Standards and Criteria, and DOE administrative limits.

Siemens reported a proposed effective equivalent dose of 1 rem per year (10 msv/year).

How do DOE's estimates, which are admittedly for a more labor intensive facility, compare to estimates and working knowledge from Europe?

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2. Which stations will involve working with oxide powders and what increased risks of inhalation and ingestion will these workers have relative to other work stations? How much "very light and fluffy" powder would have to be inhaled to cause acute health effects, chronic adverse health effects, or a high risk of cancer?

3. Which stations will involve working with MOX scrap materials and dry contaminated waste, and what are the increased and associated risks of working with these specific materials?

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4. What options are available to lower all these risks if increased automation was available?"

In the Draft SPDEIS, DOE presented cumbersome tables burdened with irrelevant and redundant scientific notation, and neglected to address the range of radiation exposures in a MOX plant. In the Final SPDEIS, DOE should address these issues.

FD336

FD336–29 **Human Health Risk**

The worker dose given in this SPD EIS was revised based on France's MELOX plant operating experience.

The higher worker doses quoted by the commentor are associated with European MOX facilities that handle reprocessed irradiated plutonium, which has a much higher dose conversion factor due to trace amounts of fission products in addition to a different plutonium isotopic spectra than that associated with weapons-grade material. For comparison, the same amount of unirradiated plutonium, such as that being proposed for the U.S. MOX facility, would have a dose conversion factor of about 75 percent less. It would therefore be expected that these worker doses would be higher than those resulting from the handling of unirradiated weapons-grade plutonium at the proposed MOX facility.

The remainder of this comment is addressed in response FD336–27.

FD336–30 **Human Health Risk**

The total predicted numbers of adverse health effects from working with plutonium, including plutonium in powder form, scrap materials, and dry contaminated waste , are included in the Human Health Risk sections of Chapter 4 of Volume I related to the MOX facility and in Appendix J (e.g., Table J–11). Less than 0.1 additional fatal cancers would be expected among workers from MOX facility operations over a 10-year period. Workers are protected against the inhalation of plutonium because glovebox operations are involved and the workers wear masks. During this same 10-year period, no additional fatal cancers would be expected from MOX facility normal operations in the general population. The amount of plutonium that would have to be inhaled to cause an LCF is about 0.00005 g (5 one-hundred thousands of a gram), depending on the isotope mixture. However, since the amount of plutonium inhaled by workers or the general population from the operation of the proposed surplus plutonium disposition facilities is significantly less than this, no LCFs from plutonium inhalation are expected.

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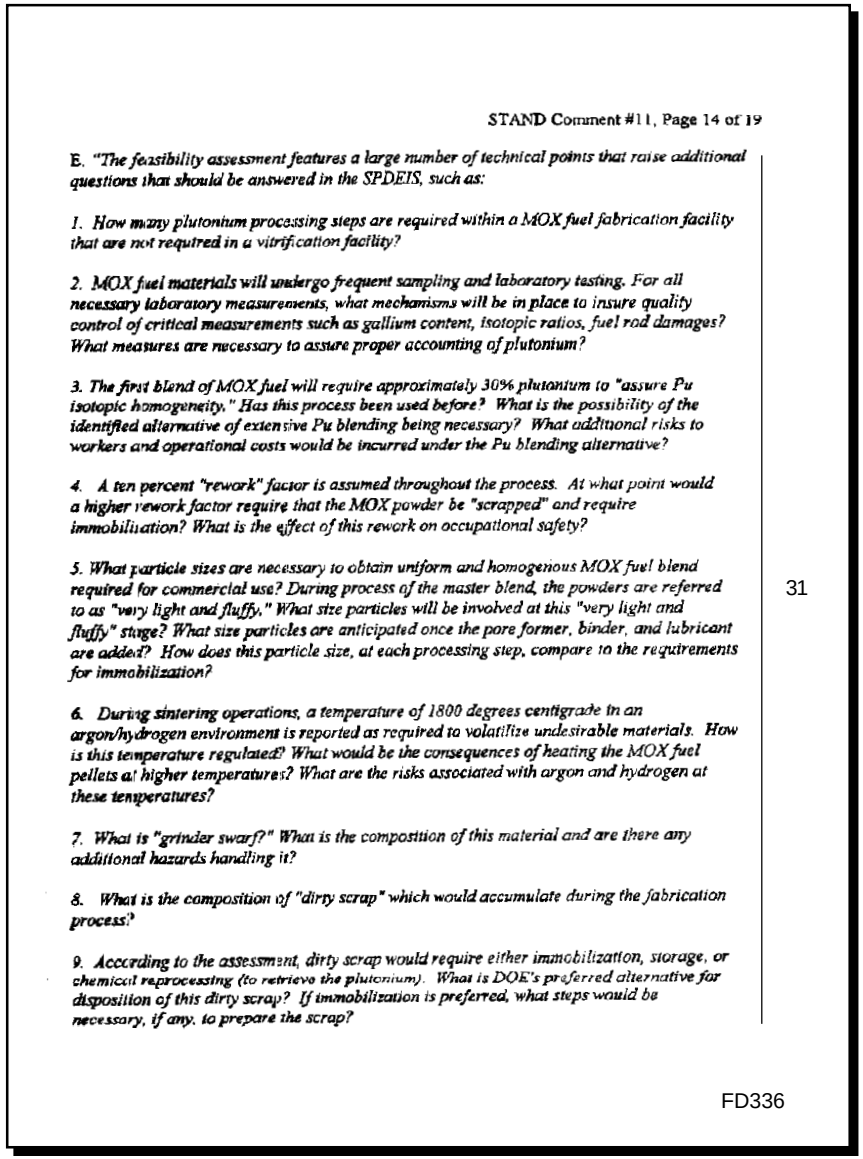

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E. *"The feasibility assessment features a large number of technical points that raise additional questions that should be answered in the SPDEIS, such as:*

1. How many plutonium processing steps are required within a MOX fuel fabrication facility that are not required in a vitrification facility?

2. MOX fuel materials will undergo frequent sampling and laboratory testing. For all necessary laboratory measurements, what mechanisms will be in place to insure quality control of critical measurements such as gallium content, isotopic ratios, fuel rod damages? What measures are necessary to assure proper accounting of plutonium?

3. The first blend of MOX fuel will require approximately 30% plutonium to "assure Pu isotopic homogeneity." Has this process been used before? What is the possibility of the identified alternative of extensive Pu blending being necessary? What additional risks to workers and operational costs would be incurred under the Pu blending alternative?

4. A ten percent "rework" factor is assumed throughout the process. At what point would a higher rework factor require that the MOX powder be "scrapped" and require immobilization? What is the effect of this rework on occupational safety?

5. What particle sizes are necessary to obtain uniform and homogenous MOX fuel blend required for commercial use? During process of the master blend, the powders are referred to as "very light and fluffy." What size particles will be involved at this "very light and fluffy" stage? What size particles are anticipated once the pore former, binder, and lubricant are added? How does this particle size, at each processing step, compare to the requirements for immobilization?

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6. During sintering operations, a temperature of 1800 degrees centigrade in an argon/hydrogen environment is reported as required to volatilize undesirable materials. How is this temperature regulated? What would be the consequences of heating the MOX fuel pellets at higher temperatures? What are the risks associated with argon and hydrogen at these temperatures?

7. What is "grinder swarf?" What is the compostion of this material and are there any additional hazards handling it?

8. What is the composition of "dirty scrap" which would accumulate during the fabrication process?

9. According to the assessment, dirty scrap would require either immobilization, storage, or chemical reprocessing (to retrieve the plutonium). What is DOE's preferred alternative for disposition of this dirty scrap? If immobilization is preferred, what steps would be necessary, if any, to prepare the scrap?

FD336

Concerning the commentor's question about increased automation, the MOX facility design is subject to modifications during the design and construction process. Modifications, including automation, may be made, as appropriate, to reduce radiation exposures and to optimize equipment placement and process flow. All proposed surplus plutonium disposition facilities, including the MOX facility, would incorporate design features and be operated in a manner that reduces doses to workers and the public to ALARA levels.

Although the format of the radiological impact data is the same among alternatives, there is no explicit redundancy in the information.

FD336–31 **MOX Approach**

The processing steps involved in the immobilization of surplus plutonium are given in Section 2.4.2, and those involved in the fabrication of MOX fuel are given in Section 2.4.3. A comparison of the number of processing steps would not be appropriate because a number does not provide an indication of the complexity of the process and the potential environmental impacts.

DOE would implement quality assurance and safeguards (material control and accountability) procedures at each of the proposed surplus plutonium disposition facilities. DOE has implemented a quality assurance program for the entire fissile materials disposition program in accordance with DOE Order 414.1. This quality assurance program will be expanded by DCS into detailed plans for each step of the disposition process. Additional safeguards may be added or modified as required, especially those needed to support international inspections.

As explained in Section 2.4.3.2, MOX fuel fabrication would begin with blending and milling the plutonium dioxide powder to ensure general consistency in enrichment and isotopic concentration. The uranium and plutonium powders would be blended and milled together to ensure uniform distribution of the plutonium in the MOX, and to adjust the particle size of the MOX powder. The MOX powder would then be made into pellets by pressing the powder into shape, sintering (baking at high temperature) the formed pellets, and grinding the sintered pellets to the proper dimensions.

Materials and pellets would be inspected at each stage, and any rejected materials would be returned to the process for reuse. All operations would be performed in sealed gloveboxes with inert atmospheres. Sintering furnaces would also be sealed, and offgases would be filtered and monitored prior to release to the atmosphere. Because blending is planned for all the plutonium dioxide, the risks are reflected in the Human Health Risk sections in Chapter 4 of Volume I related to the MOX facility and in Appendix J. Costs associated with the MOX facility are contained in a separate report as discussed in response FD336–10.

The 10 percent rework factor is a conservative estimate established to determine potential environmental impacts. It is not expected that the fabrication of MOX fuel would result in that amount of rework because the technologies used in this process are well known in industrial-scale operation. The human health risk of reworking 10 percent of the feed material are included in the overall risks reported in the Human Health Risk sections of Chapter 4 related to the MOX facility and in Appendix J.

The Request for Proposals specified that plutonium dioxide particle sizes would range from 1 to 100 microns. However, the decision to include the plutonium-polishing process in the MOX facility has essentially eliminated particle size requirements for the plutonium dioxide feed. The immobilization feed particle sizes are expected to range from 1 to 100 microns, although during processing, the particle size would be reduced to less than 20 microns (nominally 1 to 3 micron mean diameter).

A very narrow temperature range during sintering is required to produce uniform MOX fuel pellets that meet specifications. The temperature range would be controlled through standard mechanisms, including continual temperature measurement, automatic regulation of the heat source, and cooling mechanisms. These are standard industrial temperature control mechanisms used by industries that require high temperatures in their operations. The specific mechanisms, controls, equipment, and instrumentation would be selected during facility design. There are no safety concerns specific to the use of argon and hydrogen at the temperatures necessary for MOX fuel pellet production, only those related to any

high-temperature operation. Heating MOX fuel pellets at a temperature higher than 1,800 C (3,272 F) would not necessarily have any associated consequences. However, there is always the potential for pellets to be out of specification, even when all process parameters are met. Out-of-specification pellets can be recycled by returning them to the appropriate stage of the MOX fuel fabrication process.

The term "grinder swarf" as used in the *Feasibility Assessment* refers to MOX fuel material that results from grinding the sintered fuel pellets in a grinder to a uniform size. This material would be collected and recycled in the fuel fabrication process.

The term "dirty scrap" as used in the *Feasibility Assessment* is MOX fuel material that has become mixed with non-fuel material during processing or fabrication, and therefore, cannot be recycled as clean scrap. However, adding the plutonium-polishing process to the MOX facility makes this material amenable to recycling. DOE's preference is to recycle the nominal amount of "dirty scrap" expected to be generated during MOX fuel fabrication this way. If larger than expected quantities of "dirty scrap" are generated during MOX fuel fabrication, this material would be immobilized, rather than recycled, to avoid creating the larger amounts of wastes that would be associated with processing the material through the plutonium-polishing step.

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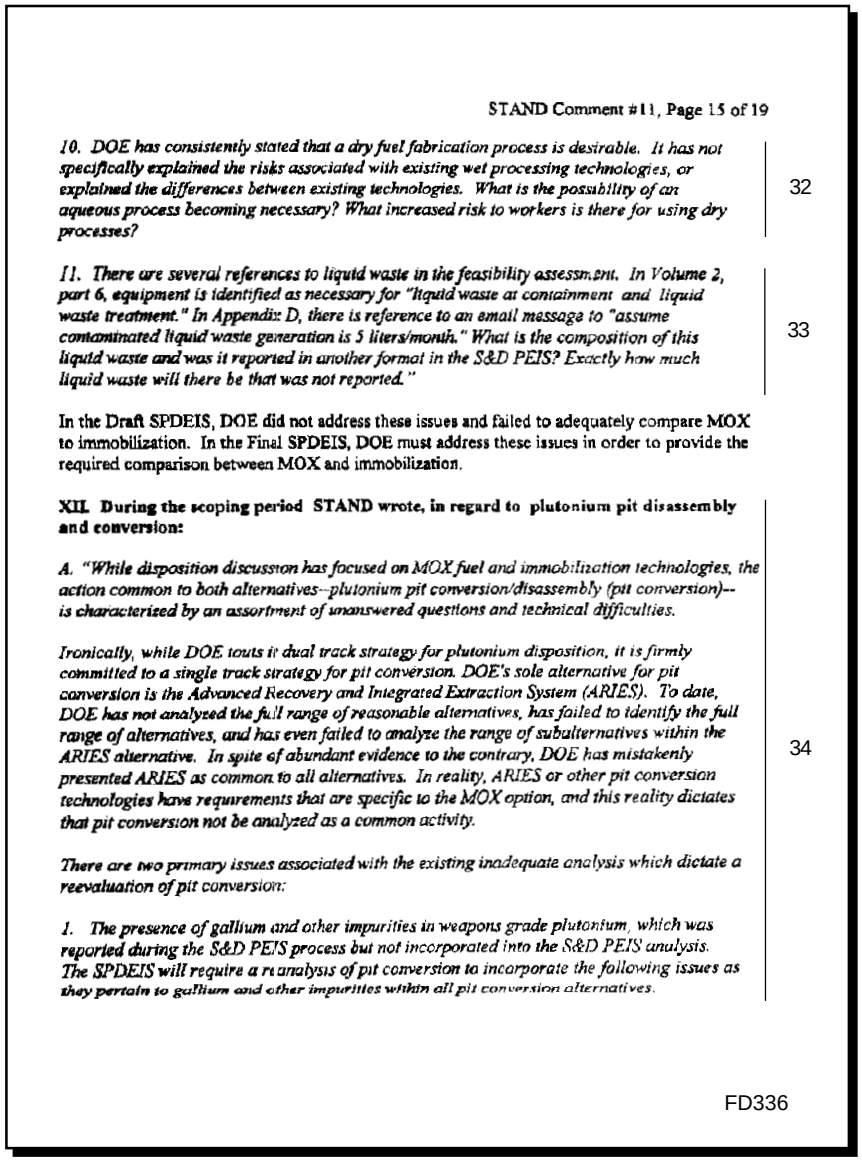

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10. DOE has consistently stated that a dry fuel fabrication process is desirable. It has not specifically explained the risks associated with existing wet processing technologies, or explained the differences between existing technologies. What is the possibility of an aqueous process becoming necessary? What increased risk to workers is there for using dry processes? 32

11. There are several references to liquid waste in the feasibility assessment. In Volume 2, part 6, equipment is identified as necessary for "liquid waste at containment and liquid waste treatment." In Appendix D, there is reference to an email message to "assume contaminated liquid waste generation is 5 liters/month." What is the composition of this liquid waste and was it reported in another format in the S&D PEIS? Exactly how much liquid waste will there be that was not reported." 33

In the Draft SPDEIS, DOE did not address these issues and failed to adequately compare MOX to immobilization. In the Final SPDEIS, DOE must address these issues in order to provide the required comparison between MOX and immobilization.

XII. During the scoping period STAND wrote, in regard to plutonium pit disassembly and conversion:

A. "While disposition discussion has focused on MOX fuel and immobilization technologies, the action common to both alternatives--plutonium pit conversion/disassembly (pit conversion)--is characterized by an assortment of unanswered questions and technical difficulties.

Ironically, while DOE touts it dual track strategy for plutonium disposition, it is firmly committed to a single track strategy for pit conversion. DOE's sole alternative for pit conversion is the Advanced Recovery and Integrated Extraction System (ARIES). To date, DOE has not analyzed the full range of reasonable alternatives, has failed to identify the full range of alternatives, and has even failed to analyze the range of subalternatives within the ARIES alternative. In spite of abundant evidence to the contrary, DOE has mistakenly presented ARIES as common to all alternatives. In reality, ARIES or other pit conversion technologies have requirements that are specific to the MOX option, and this reality dictates that pit conversion not be analyzed as a common activity. 34

There are two primary issues associated with the existing inadequate analysis which dictate a reevaluation of pit conversion:

1. The presence of gallium and other impurities in weapons grade plutonium, which was reported during the S&D PEIS process but not incorporated into the S&D PEIS analysis. The SPDEIS will require a reanalysis of pit conversion to incorporate the following issues as they pertain to gallium and other impurities within all pit conversion alternatives.

FD336

FD336–32 Plutonium Polishing and Aqueous Processing

As discussed in response FD336–6, DOE has added a plutonium-polishing process in the MOX facility. The risks associated with this process are included in the Human Health Risk and Facility Accidents sections in Chapter 4 of Volume I related to the MOX facility and in Appendixes J and K.

The desirability of a dry process stems primarily from its modern nature. Wet processing, while historically the predominant method used by DOE, is an older, less efficient and messier technology. The dry HYDOX system, a simpler and more easily controlled process, is the current standard for new operations in the weapons complex. Metal dissolution via wet processing generates hydrogen at a rate controlled by acid concentration and temperature, as opposed to the dry process where hydrogen introduction is precisely controlled by the quantity of feed. Since metal dissolution in acid is an exothermic process (i.e., generates heat), wet dissolution has a multi-variable runaway reaction potential the dry process does not. Finally, the use of heated, pressurized acids in a recirculation system has historically led to significant leakage within gloveboxes over time. Coupled with the increased maintenance and repair loads of a wet process, this increases worker risk even beyond the difficulties it poses to efficient process control. The risks of aqueous processing are detailed in the EIS.

After the plutonium metal has been rendered into a powder in the pit conversion facility, this material is dissolved in the plutonium polishing process to remove gallium in the MOX facility. This step involves the classical processes used in wet processing recovery (e.g., ion exchange, precipitation, and calcination) with two important exceptions: plutonium oxide does not generate hydrogen in dissolution and does not require pressurized recirculation of the dissolution acid. The potential accident associated with the plutonium-polishing step are included in Appendix K.

FD336–33 Waste Management

The technical reports on which this SPD EIS is based provide liquid waste generation rates. The introduction to Appendix H was revised to include these liquid waste generation rates. For all but nonhazardous wastes, DOE

chose to combine the liquid and solid waste generation values into one waste generation rate for ease of comparison with site waste generation numbers. Generation rates for contaminated liquid waste would generally be small.

FD336–34 Plutonium Polishing and Aqueous Processing

As discussed in response FD336–10, the full range of reasonable alternatives for the disassembly of pits and conversion of the plutonium was analyzed in this SPD EIS. As discussed in response FD336–2, Sections 2.18 and 4.30 provide summary and incremental impacts, respectively.

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a. Since the plutonium oxide derived from pit conversion must be very pure for MOX fuel fabrication, gallium must be reduced to very low levels (less than 100 parts per million) or altogether removed in order to fabricate MOX fuel. No similar requirements have been reported for conversion to plutonium oxide suitable for immobilization activities. DOE is obligated to address two pit conversion subalternatives, one for the MOX fuel track and one for the immobilization track. The differences in time, costs, waste streams, risks, and occupational hazards between conversion for MOX fuel use and conversion for immobilization action must be identified and analyzed clearly and completely. Failure to identify and analyze the range of effects associated with pit conversion will leave both the S&D PEIS and the SPDEIS legally and scientifically insufficient.

b. Gallium reduction for MOX fuel use is unproven. DOE has placed all its bets on thermal treatment, a dry process, even though this technology has not even been tested at a pilot stage. Nobody should be asked to accept an unproven technology. The alternative to thermal processing which was reported and discussed, but not incorporated into the analysis, is an aqueous process. Aqueous processing may be an undesirable technology, but it remains a reasonable alternative until a proven dry process is developed, tested, and proven suitable. Without identifying a reasonable, though undesirable, alternative DOE failed to fully analyze the cumulative effects of its decision to adopt the dual track strategy. The difference between the no-action alternative and the preferred alternative were inaccurately reported in the S&D PEIS. For the SPDEIS to be credible subalternatives must be developed for pit conversion for MOX fuel:

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a. Aqueous processing for gallium reduction.
b. Thermal processing for gallium reduction.

2. The ARIES process has yet to be tested at a pilot scale and is currently being analyzed at the demonstration level. DOE has not identified and analyzed the full range of reasonable alternatives if ARIES technology cannot be implemented. The same issues and solutions discussed above are applicable here as well. For the S&D PEIS to be credible, DOE is obligated to identify and analyze the full range of reasonable alternatives for pit conversion.

As pointed out numerous times, DOE has still not evaluated the full range of alternatives for plutonium pit disassembly and conversion, and has still not conducted a comparative analysis between the requirements and impacts for MOX versus immobilization. This should be addressed in the Final SPDEIS.

B. Even within the ARIES process there are many emerging issues and questions that DOE is obligated to address. These include:

Why is worker radiation exposure now estimated to be at 500 millirems per year, as reported by the Amarillo National Resource Center for Plutonium in its second quarter, 1997 newsletter? This is a 150% increase above the 200 millirems per year exposure documented in the S&D PEIS.

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FD336–35 Pit Disassembly and Conversion

The worker dose estimate in the *Storage and Disposition PEIS* was preliminary. This estimate was revised in this SPD EIS to reflect a greater understanding of the pits that would be dismantled and the associated doses connected with the dismantlement effort. This dose includes all of the steps needed to dismantle the pits and to convert the plutonium to an oxide during the operation at the proposed pit conversion facility (e.g., the Special Recovery Line). Section 2.4.1.2 was revised to more fully discuss the pit disassembly and conversion process.

The analyses presented in Chapter 4 of Volume I indicate that the pit conversion facility would be operated in a manner that would be in compliance with all applicable regulations. The pit disassembly and conversion process requires the handling of plutonium dioxide powder to transfer it from the oxidation furnace crucible to a handling can in the canning operation (which may include a blending step to declassify the powder). Automation of these steps is being evaluated as part of the technology development program and will be instituted if it is determined that the dose to the handler is too high.

As explained in Chapter 4 and Appendix J, doses for all operations would be kept well below the Federal limit of 5,000 mrem/yr and DOE's administrative limit of 2,000 mrem/yr. (The Pantex administrative limit, which is less than the 2,000–mrem/yr DOE limit, might be exceeded unless modified if the pit conversion facility were sited there.) An ALARA program would ensure that doses are reduced to levels that are as low as is reasonably achievable.

The LANL document, *Estimates of Staffing for the Pit Disassembly and Conversion Facility* (LA-UR-97-1844, 1997), was one of the referenced documents used to develop the *Pit Disassembly and Conversion Facility Environmental Impact Statement Data Reports* (LA-UR-97-2907 through 2910, June 1998).

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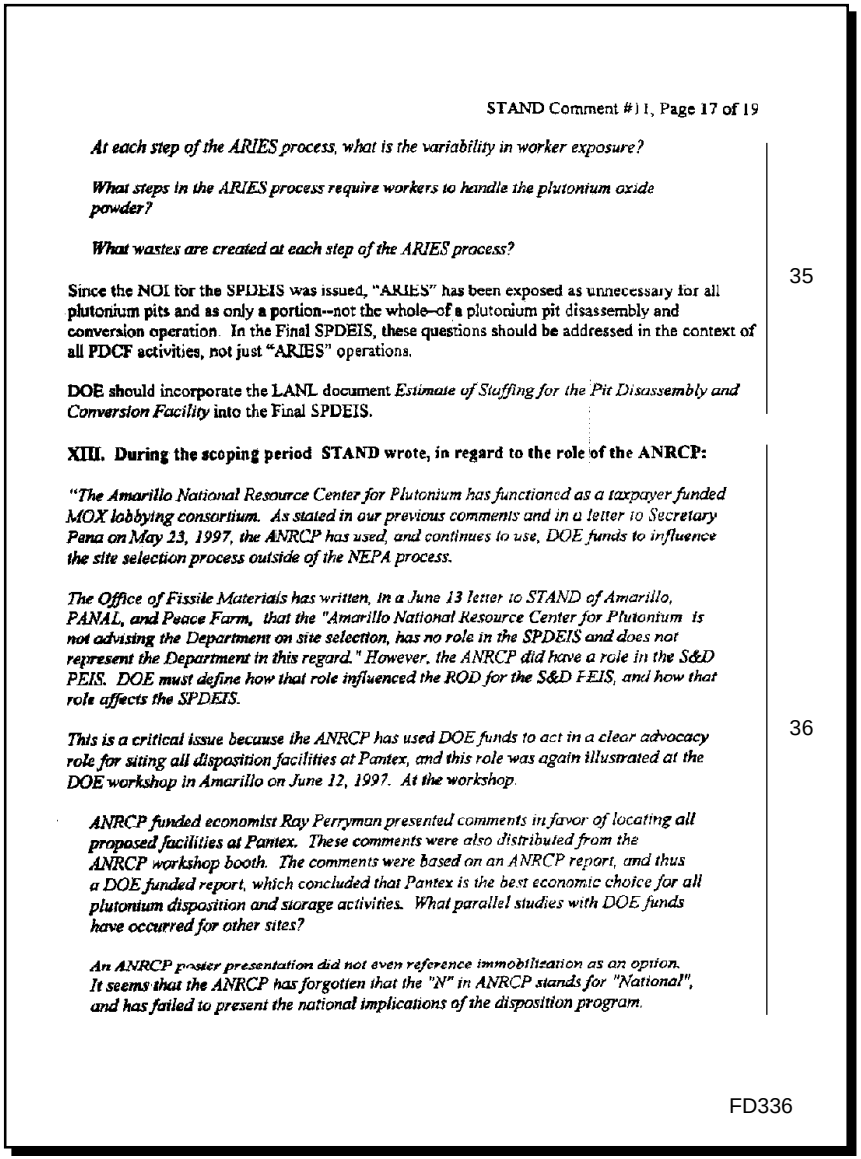

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At each step of the ARIES process, what is the variability in worker exposure?

What steps in the ARIES process require workers to handle the plutonium oxide powder?

What wastes are created at each step of the ARIES process?

Since the NOI for the SPDEIS was issued, "ARIES" has been exposed as unnecessary for all plutonium pits and as only a portion--not the whole--of a plutonium pit disassembly and conversion operation. In the Final SPDEIS, these questions should be addressed in the context of all PDCF activities, not just "ARIES" operations.

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DOE should incorporate the LANL document *Estimate of Staffing for the Pit Disassembly and Conversion Facility* into the Final SPDEIS.

XIII. During the scoping period STAND wrote, in regard to the role of the ANRCP:

"The Amarillo National Resource Center for Plutonium has functioned as a taxpayer funded MOX lobbying consortium. As stated in our previous comments and in a letter to Secretary Pena on May 23, 1997, the ANRCP has used, and continues to use, DOE funds to influence the site selection process outside of the NEPA process.

The Office of Fissile Materials has written, in a June 13 letter to STAND of Amarillo, PANAL, and Peace Farm, that the "Amarillo National Resource Center for Plutonium is not advising the Department on site selection, has no role in the SPDEIS and does not represent the Department in this regard." However, the ANRCP did have a role in the S&D PEIS. DOE must define how that role influenced the ROD for the S&D FEIS, and how that role affects the SPDEIS.

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This is a critical issue because the ANRCP has used DOE funds to act in a clear advocacy role for siting all disposition facilities at Pantex, and this role was again illustrated at the DOE workshop in Amarillo on June 12, 1997. At the workshop

ANRCP funded economist Ray Perryman presented comments in favor of locating all proposed facilities at Pantex. These comments were also distributed from the ANRCP workshop booth. The comments were based on an ANRCP report, and thus a DOE funded report, which concluded that Pantex is the best economic choice for all plutonium disposition and storage activities. What parallel studies with DOE funds have occurred for other sites?

An ANRCP poster presentation did not even reference immobilization as an option. It seems that the ANRCP has forgotten that the "N" in ANRCP stands for "National", and has failed to present the national implications of the disposition program.

FD336

FD336–36 **DOE Policy**

ANRCP is a private entity funded and directed by the State of Texas using grant funds provided by DOE. The specific work they perform is the subject of agreement between ANRCP and the State of Texas. DOE (through the Amarillo Area Office) provides oversight only on the terms and conditions of the grant to the State of Texas. That oversight shows that the work being performed is within those terms. ANRCP has not and will not play a role in the preparation of this SPD EIS nor does it represent DOE in any manner. Further, the reports, studies, statements, and presentations made by ANRCP do not represent the position of DOE. For the above reasons, DOE has considered the commentor's suggestion of parallel studies and has decided they are not appropriate. Comments from ANRCP were treated the same as any other comment on the SPD Draft EIS.

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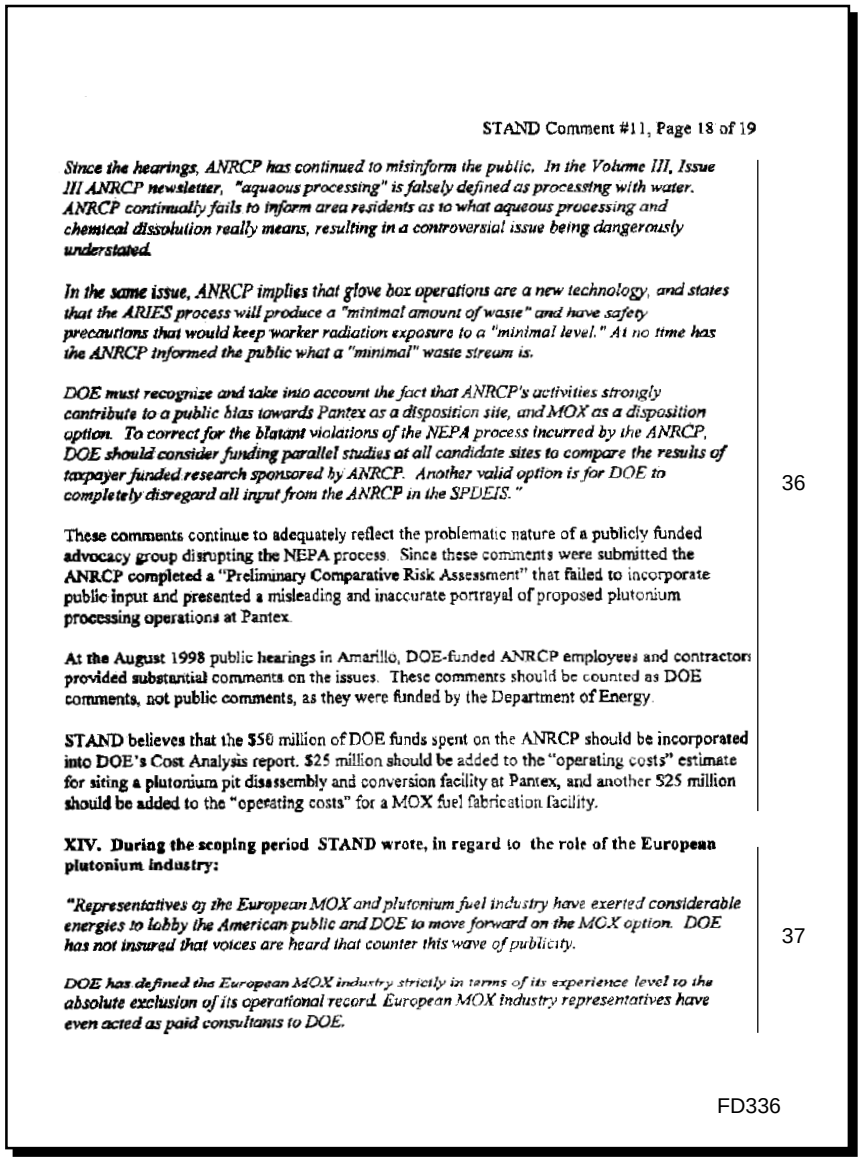

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Since the hearings, ANRCP has continued to misinform the public. In the Volume III, Issue III ANRCP newsletter, "aqueous processing" is falsely defined as processing with water. ANRCP continually fails to inform area residents as to what aqueous processing and chemical dissolution really means, resulting in a controversial issue being dangerously understated.

In the same issue, ANRCP implies that glove box operations are a new technology, and states that the ARIES process will produce a "minimal amount of waste" and have safety precautions that would keep worker radiation exposure to a "minimal level." At no time has the ANRCP informed the public what a "minimal" waste stream is.

DOE must recognize and take into account the fact that ANRCP's activities strongly contribute to a public bias towards Pantex as a disposition site, and MOX as a disposition option. To correct for the blatant violations of the NEPA process incurred by the ANRCP, DOE should consider funding parallel studies at all candidate sites to compare the results of taxpayer funded research sponsored by ANRCP. Another valid option is for DOE to completely disregard all input from the ANRCP in the SPDEIS." 36

These comments continue to adequately reflect the problematic nature of a publicly funded advocacy group disrupting the NEPA process. Since these comments were submitted the ANRCP completed a "Preliminary Comparative Risk Assessment" that failed to incorporate public input and presented a misleading and inaccurate portrayal of proposed plutonium processing operations at Pantex.

At the August 1998 public hearings in Amarillo, DOE-funded ANRCP employees and contractors provided substantial comments on the issues. These comments should be counted as DOE comments, not public comments, as they were funded by the Department of Energy.

STAND believes that the $50 million of DOE funds spent on the ANRCP should be incorporated into DOE's Cost Analysis report. $25 million should be added to the "operating costs" estimate for siting a plutonium pit disassembly and conversion facility at Pantex, and another $25 million should be added to the "operating costs" for a MOX fuel fabrication facility.

XIV. During the scoping period STAND wrote, in regard to the role of the European plutonium industry:

"Representatives of the European MOX and plutonium fuel industry have exerted considerable energies to lobby the American public and DOE to move forward on the MOX option. DOE has not insured that voices are heard that counter this wave of publicity. 37

DOE has defined the European MOX industry strictly in terms of its experience level to the absolute exclusion of its operational record. European MOX industry representatives have even acted as paid consultants to DOE.

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FD336–37 **MOX Approach**

DOE did consider past performance along with past experience in awarding the MOX fuel fabrication and irradiation services contract. DOE's NEPA implementing regulations in 10 CFR 1021 contain a specific provision, Section 216, which allows contracts to be let contingent on completion of the NEPA process, in this case the SPD EIS ROD. This section requires DOE to phase contract work in a way that will allow the NEPA review process to be completed in advance of a go/no-go decision. In the case of this SPD EIS, the go/no-go decision will be determined by which alternative is selected by the decisionmaker. In accordance with 10 CFR 1021.216, DOE prepared and provided an Environmental Critique, including information on DCS's European MOX experience, to the source selection board. The critique documents the consideration given to environmental factors and records the relevant environmental consequences of reasonable alternatives have been evaluated in the selection process. Until the decision is announced in the ROD, no substantive design work or construction can be started on the MOX facility. DOE then prepared an Environmental Synopsis on the basis of the Environmental Critique which was released to the public as Appendix P of the *Supplement to the SPD Draft EIS* in April 1999. During the 45-day period for public comment on the *Supplement*, DOE held a public hearing in Washington, D.C., on June 15, 1999, and invited comments. Responses to those comments are provided in Volume III, Chapter 4.

All comments received on the SPD Draft EIS were given equal consideration. DOE has prepared this SPD EIS by carefully obtaining comparable data on all of the alternatives, analyzing the data in a consistent manner using well-recognized and accepted procedures, and presenting the results in a full and open manner.

DOE has been actively pursuing immobilization options. Meetings have been held with European vitrification experts to gain their insights.

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This activity indicates a clear bias towards the MOX option that suggests that DOE is not sincerely considering a full immobilization alternative. After all, COGEMA and BNFL have substantial experience in vitrification, yet DOE is not consulting these companies on vitrification issues. For DOE to compensate for this bias towards MOX, it must objectively address the following issues and questions regarding European MOX experience in this EIS:

How much opposition to MOX fuel fabrication and utilization in Europe is there? What are the primary arguments citizens have set forth in opposition to MOX in Europe?

Why have two large MOX fabrication facilities--the Belgonucleaire P1 plant and the Siemens "new" Hanau plant--failed to obtain licenses during this decade?

Why did the old Hanau plant operated by Siemens close in the early 1990's? How many accidents occurred at that plant during its operational history, and how many workers were contaminated with radiological materials?

37

What real impacts to air, water, and soil have European MOX facilities had in the past 30 years? DOE should obtain and make public annual data on emissions and discharges of radioactive and nonradioactive hazardous substances from these plants.

What differences in the regulatory framework--licensing, pollution limits, worker and public exposure to plant pollutants--exist between the United States and nations which fabricate and/or use MOX fuel?"

In the Draft SPDEIS, DOE only cited published documents from academic and trade journals to document the European MOX industry experience. This is an insufficient approach, and DOE should address these questions in the Final SPDEIS by obtaining and making public pertinent information on the European MOX industry as a condition for those companies doing business as DOE contractors.

Sincerely,

Don Moniak
Program Director
STAND of Amarillo

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September 28, 1998

STAND COMMENT #12
Surplus Plutonium Disposition Draft Environmental Impact Statement (Draft SPDEIS)
Re: NEPA AND PLUTONIUM PIT STORAGE
AT THE PANTEX NUCLEAR WEAPONS PLANT

Office of Fissile Materials Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Department of Energy, Office of Fissile Materials Management:

The Department of Energy continues to store plutonium pits at the Pantex plant in containers unsuitable for long-term storage and in facilities that mostly lack required environmental controls and that are considered "unacceptable" by Pantex officials. Since DOE's National Labs consider "extended storage" to be greater than five years (see Background, Section III), most plutonium storage at Pantex should be defined as "long-term" rather than "interim." DOE's major efforts to improve the safety of long-term storage of plutonium pits at Pantex have not materialized, and DOE is formulating plans and proposals in response to its failure to implement its storage decisions, but without required public input.

1. "Interim" vs. "Long-term" Storage of Plutonium at Pantex.

A. Interim Storage of pits at Pantex is presently covered by the Record of Decision (ROD) for the *Final Environmental Impact Statement for the Continued Operation of the Pantex Plant and Associated Storage of Nuclear Weapon Components* (Pantex EIS) and referenced in the *Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Impact Statement* (SD-PEIS) and the *Stockpile Stewardship and Management Programmatic Environmental Impact Statement* (SSM-PEIS). Tiering of the Draft SPDEIS to these documents cannot occur without a supplemental EIS for long-term plutonium pit storage.

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1. The Pantex EIS only addressed storage of pits from dismantlement activities, and not from other sites.

2. According to the Pantex EIS, "Interim storage does not refer to a time frame, but rather to the interval of time that will occur until a Record of Decision (ROD) is made on long term storage and the site and facilities in that ROD are ready to receive the pits. The decision on the site and facilities for long-term storage will be based on the SD-PEIS." (Page 1-10)

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FD337–1 Storage and Disposition PEIS and ROD

DOE acknowledges the commentor's concern regarding the storage of plutonium pits at Pantex. DOE is committed to the safe, secure storage of pits and is evaluating options for upgrades to Pantex Zone 4 facilities to address plutonium storage requirements. DOE has addressed some of the commentor's concerns in an environmental review concerning the repackaging of Pantex pits into a more robust container. This evaluation is documented in the *Supplement Analysis for: Final Environmental Impact Statement for the Continued Operation of the Pantex Plant and Associated Storage of Nuclear Weapon Components—AL–R8 Sealed Insert Containers* (August 1998). This document is on the MD Web site at http://www.doe-md.com. Based on this supplement analysis, the decision was made to repackage pits at Pantex into the AL–R8 sealed insert container and to discontinue plans to repackage pits into the AT–400A container.

Worker exposure estimates attributable to the decision to repackage pits in AL–R8 sealed insert containers were incorporated in the revised Section 2.18 and Appendix L.5.1.

The issues raised in this comment relate to pit storage decisions made in the *Storage and Disposition PEIS* and the *Final Environmental Impact Statement for the Continued Operation of the Pantex Plant and Associated Storage of Nuclear Weapon Components* (DOE/EIS-0225, November 1996). DOE is considering leaving the repackaged surplus pits in Zone 4 at Pantex for long-term storage. An appropriate environmental review will be conducted when the specific proposal for this change has been developed; addressing, for example, whether additional magazines need to be air-conditioned. The analysis in this SPD EIS assumes that the surplus pits are stored in Zone 12 in accordance with the ROD for the *Storage and Disposition PEIS*.

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3 The coverage for the Pantex EIS was only for "interim storage requirements for pits from weapons dismantlement." (Page 1-14). DOE also specified in the Pantex EIS, that, "the proposed action in this EIS was designed to specifically to encompass the interim storage of pits from weapons dismantlement until such time as longer term decisions regarding storage and disposition could be made and implemented." (Page 1-14, 1-16).

4 Coverage for interim storage of Rocky Flats plutonium was covered in the context of "cumulative impacts" for the preferred alternative in the SD-PEIS.

5. In the January 1997 ROD for the Pantex EIS, DOE selected Pantex for the interim storage of up to 20,000 plutonium pits in Zone 4 bunkers, and rejected interim storage of plutonium pits at other sites based on transportation risks and costs.

6. In the Pantex EIS, DOE failed to conduct a "full and fair analysis of the significant environmental impacts" (CFR1502.1) did not analyze reasonably foreseeable significant adverse impacts such as the failure to implement the storage decision (CFR 1502.22.(b).(1), and omitted known scientific information. (See also Background: Section IV.)

B. Long-term storage of plutonium is covered in the ROD's for the SD-PEIS and SSM-PEIS, and referenced in the Pantex EIS. The failure to implement the SD-PEIS ROD could be interpreted as meaning that plutonium storage at Pantex would remain defined as "interim."

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1. DOE confirmed that long-term storage of plutonium was only to be addressed in the SD-PEIS (and also SSM PEIS): "Decisions on the long-term storage of pits would be made in the RODs of the PEIS's. A decision relating to the interim storage of pits at Pantex would be made in the ROD of the Pantex EIS pending implementation of the selected long-term storage alternative(s)." (SD-PEIS, Page 1-6, Page 1-7)

2. In Footnote 6 of the SD-PEIS (Page 1-7), DOE wrote that: "If there is a delay in implementing the ROD's for either of the PEIS's (for example, delay due to the availability and construction of upgrades for long-term storage facilities), then there would be a need to make a decision on the location of interim storage of pits. The Pantex EIS has been completed with the analysis of interim storage alternatives...to support a decision relating to the storage of pits until a long-term storage decision is made and implemented." (Page 1-9)

3. Storage of RFETS at Pantex was considered only in the context of long-term storage analyses and the cumulative impact of long-term RFETS plutonium storage on the interim storage of plutonium from dismantlement at Pantex.
4. In the SD-PEIS ROD, DOE selected Pantex as the long-term storage site for Pantex plutonium pits from dismantlement activities, RFETS plutonium pits, and SRS strategic plutonium pits. In the SD-PEIS, DOE selected existing facilities in Zone 12 at Pantex for long-term storage following upgrades to those facilities, and identified the AT-400A as the container in which all plutonium pits would be repackaged over a five year period.

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II. JUSTIFICATION FOR A SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR LONG -TERM STORAGE OF PLUTONIUM PITS

STAND believes the U.S. Department of Energy (DOE) is in violation of the National Environmental Policy Act (NEPA) for not conducting a supplemental EIS for long-term and interim plutonium pit storage. In addition, DOE should not "charge" the costs of plutonium pit repackaging to the operations costs for a Plutonium pit disassembly and conversion facility at DOE candidate sites other than Pantex. DOE is in violation of NEPA for three specific reasons:

A. The ongoing transportation of plutonium pits from DOE's Rocky Flats Environmental Technology Site (RFETS) near Denver, Colorado to the Pantex Nuclear Weapons Plant near Amarillo, Texas. This action was proposed in the January 1997 Record of Decision (ROD) for the Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Impact Statement (SD-PEIS). Shipments of plutonium from RFETS to Pantex is in violation of NEPA for insufficient analysis and because it is only part of the long-term storage decision that has not been implemented. (see Background: RFETS Pu Shipments, Page 4)

B. Long- term storage activities at the Pantex plant that were not analyzed under NEPA. Since existing Rocky Flats plutonium pits were moved in violation of NEPA, they are being stored in violation of NEPA. According to the SD-PEIS ROD, long term storage of RFETS plutonium at Pantex was contingent upon the implementation of facility and container upgrades. These upgrades have since been abandoned. Long- term storage and interim storage activities of Rocky Flats plutonium at Pantex activities are occurring at the Pantex plant that were not analyzed under NEPA. (See Background: RF's Pu Interim Storage, Page 5) 1

Actions A and B are in violation of NEPA because:

- "NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." (CFR1500.1.(b))

- The actions are not covered by the existing program statement (CFR1506.1.(c)).

- DOE has not prepared a supplemental Environmental Impact Statement in response to "substantial changes to the proposal or significant new circumstances or information." (CFR1021.314.(a)).

C. DOE is proposing and analyzing plans for long-term storage of plutonium at the Pantex plant outside of the NEPA process, which is in violation of NEPA requirements to

- "integrate the NEPA process with other planning at the earliest possible time to in planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts." (CFR1501.2).

- "begin its NEPA review as soon as possible after the time that DOE proposes an action or is presented with proposal."

- "Agencies shall not commit resources prejudicing selection of alternatives before making a final decision." (CFR1502.2.(f)).

(see Background: Long-Term Plutonium Pit Storage Plans, Page 8)

A. Background: RFETS Pu Shipments

Past and on-going transport of plutonium pits from DOE's Rocky Flats Environmental Technology Site (RFETS) near Denver, Colorado to the Pantex Nuclear Weapons Plant near Amarillo, Texas is a violation of NEPA. This action was proposed in the January 1997 Record of Decision for the Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Impact Statement.

1. The analysis of the effects of transport from Rocky Flats to Pantex was incomplete in the SD-PEIS, and some effects were not analyzed.

a. The future of the plutonium pits at Rocky Flats was analyzed within the context of the SD-PEIS. In the Pantex EIS, which only covered plutonium from dismantlement activities, DOE wrote that, "the environmental impact associated with transferring surplus pits from RF's to Pantex, including the impacts of their storage at Pantex Plant, will be included in the Final SD PEIS." (Page 1-15) Furthermore, DOE wrote that the proposed action in the Pantex EIS "would not require additional intersite transportation." (Page 3-24). 1

b. In the SD-PEIS, DOE wrote that, "The intersite transportation analysis for shipment of the RFETS Pu to Pantex is given in Section 4.4 of this PEIS for both workers and the public" (Page 4-53).

c. The only indication of an intersite transportation analysis in the SD-PEIS is a single "summary table" (Table 4.4.3.2-1) presented in Section 4.4 and titled: "Total potential fatalities from intersite transportation activities for the preferred alternative for storage." (Page 4-821). This same table is referenced and repeated in Section 4.6, pages 4-892-893.

d. In the SD-PEIS, DOE wrote that, in regard to intersite transfers, "supporting analyses and information are contained in Appendix G." (Page 4-821. Q-1)

e. DOE stated Appendix G in the SD-PEIS "provides estimated health risks from the transport of materials, historical shipment data for the affected sites, and other supporting documentation." (Page G-1).

f. In Appendix G, there is no supporting documentation for transportation of plutonium from RFETS to Pantex or other sites. Appendix G only contains historical intersite shipment data.

g. Appendix G does not provide estimates of actual radiological exposures to maximum exposed individuals or the average exposures to people along the transportation routes.

h. While Appendix G provides a substantial assessment of the risks of transportation for MOX fuel fabrication in Europe, it does not provide equivalent analyses for intersite transportation of plutonium pits or non-pit plutonium. There are no accident analyses of on-the-road transportation risks.

i. Appendix M does not contain any analyses of on-the-road transportation risks only a bounding analysis for intrasite movement of plutonium.

j. In the Pantex EIS, DOE evaluated the radiological exposure and health risk from shipping 8,000 plutonium pits and shipping 20,000 plutonium pits from Pantex to potential interim storage sites. (Section 4.16.4.1, Pages 4-232 to 4-234). No equivalent analyses for radiological exposure was conducted for transportation of RF's plutonium to Pantex. DOE also provided supporting documentation and analyses in Appendix F of the Pantex EIS for all intersite shipments of nuclear materials. 1

B. Background: RFETS Pu Interim Storage

Interim storage of Rocky Flats plutonium is occurring at Pantex although the storage activities do not involve those activities necessary to implement the SD-PEIS ROD. Long-term storage and interim storage activities of Rocky Flats plutonium at Pantex activities are occurring at the Pantex plant that were not analyzed under NEPA. (The failure to implement long-term storage ROD has also resulted in the disposition transportation analyses being invalid at this time.)

1. Rocky Flats plutonium pits were moved in violation of NEPA, and are being stored in violation of NEPA.

2. Analysis in the SD-PEIS was for long-term storage of plutonium pits presently at Rocky Flats, not for interim storage of Rocky Flats plutonium.

3. The Pantex EIS only addressed interim storage of plutonium pits resulting from the dismantlement of nuclear weapons, and not plutonium from other sites.

In the Pantex EIS, DOE wrote that, "the environmental impact associated with transferring surplus pits from RF's to Pantex, including the impacts of their storage at Pantex Plant, will be included in the Final SD PEIS." (Page 1-15)

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4. The Pantex EIS only addressed the cumulative impacts of the SD-PEIS alternative for long-term storage of Rocky Flats Pu pits.

The final SD-PEIS will contain analyses of RFETS alternative, including "intersite transportation, packaging operations at both RFETS and Pantex plant, storage of the pits, first in Zone 4 and then in Zone 12, and intrasite transportation from Zone 4 to Zone 12. The environmental impacts of its action have been added to this cumulative impact discussion in Chapter 4 of this Final EIS." (Page 1-15)

5. There is no NEPA analysis for interim storage of RFETS plutonium pits. According to the SD-PEIS, Interim Storage of Rocky Flats plutonium was to addressed in the RFETS "Interim Storage of Plutonium at the Rocky Flats Environmental Technology Site EIS " (Page 1-9). There is no document prepared or being prepared.

6. According to the SD-PEIS, the supporting documentation for storage of RFETS Pu at Pantex is covered in Appendix Q of the SD-PEIS, "storage and intrasite transportation (at Pantex) of RFETS pits at Zone 4 West is described in Appendix Q." (Page 2-53, 4-812) and "intrasite transportation of pits between Zone 4 and Zone12 at Pantex to support storage of RFETS pits for the Preferred Alternative is described in Appendix Q." (Page G-1).

7. The preferred alternative for long-term storage, and the analysis in Appendix Q to support storage of RFETS pits, is based on the assumption that existing Pantex facilities will be upgraded. According to the SD-PEIS, "Upgrade storage facilities in Zone 12 south (to be competed by 2004) at Pantex to store those pits currently at Pantex, and pits from RFETS, pending disposition. Storage facilities at Zone 4 would continue to be used for these pits prior to the completion of upgrades." 1

a. DOE did not analyze the effects of long-term storage of Rocky Flats plutonium in Zone 4 at Pantex. DOE presently intends to keep Rocky Flats and Pantex plutonium in Zone 4 pending disposition, which violates the spirit and letter of the SD-PEIS ROD (see IV).

b. In the SD-PEIS No Action alternative, DOE wrote that, "all site Pu holdings specific to the Storage and Disposition program would continue to be stored at Zone 4 facilities."

c. Use of Zone 4 for long-term storage of plutonium pits awaiting disposition constitutes an unreasonable alternative in the SD-PEIS. DOE did not cite Zone 4 long-term storage on Page 2-2, where it states that "Options that were not disqualified or eliminated through the use of the screening criteria emerged from the screening process...two options were identified as reasonable: Upgrade of storage facilities to make them suitable for long term storage and consolidation....at DOE sites." Long-term storage in Zone 4 did not pass this screening criteria.

d. In the SD-PEIS, the screening criteria for long-term storage included the technical viability of "providing "storage of nuclear components and materials for up to 50 years." (Page 2-2). In the

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Pantex EIS, the average remaining life span for 22 pit storage facilities at Pantex is only 34 years, and this average includes buildings in Zone 12 that are newer than those in Zone 4 (Page 4-10).

e. Pantex managers defined the proposed upgrade of facilities in Zone 12 as only providing "interim storage of strategic pits, excess plutonium and secondaries in existing facilities for up to 30 years without having to construct entirely new facilities."

f. All identified upgrades for pit storage are for Zone 12 at Pantex, not Zone 4:

- "Buildings 12-66 and 12-82 in Zone 12 south would be modified to accommodate the long term store of Pantex Pu material and RFETS pit Pu material for the storage preferred alternative." (Page 4-863, 4-873, 4-876,4-879)

- "Since the result of any of these alternatives would be the removal of Pu pits not in weapons from Zone 4, aircraft crash and release probabilities would be reduced." (R-1).

- "The upgrade alternative would modify existing facilities in Zone 12 South." "The modifications for storage would be integrated into the Pantex infrastructure, waste, security and assembly/disassembly operations systems."

- Buildings 12-66 and 12-82 would be upgraded. (2-53)

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g. In the SD-PEIS, DOE only analyzed the accident analysis of existing facilities in Zone 12. (Section M.5.2.5). "The accident analysis of the upgrade...of existing facilities at Pantex consist of two buildings, a Surplus Materials Storage Building (SM building) and a Strategic Reserves Storage Building (M-285)

8. The preferred alternative for long-term storage, and the analysis in Appendix Q to support storage of RFETS pits, is based on the assumption that repackaging of pits in AT-400A containers will occur the repackaging of plutonium pits in AT-400A containers.

a. DOE has failed to implement the AT-400A container repackaging program.

b. Even under the No-Action alternative, DOE was committed to repackage pits in the "more robust AT-400A containment vessel, and storage. (p. 2-22, SD-PEIS) DOE also committed to repackaging in AT-400A's in the Pantex EIS. The transportation of existing Pantex pits from Zone 4 to Zone12 and the repackaging of the pits from AL-R8 to AT-400A containers is analyzed in the Pantex EIS (SD-PEIS Page 2-53). The analysis in the Pantex EIS, DOE stated that "because this pit repackaging process has not been done with this type of container, there is no historical dosimetry information available. Therefore, conservative dose estimates have been made for this operation." (Page 4-274, Pantex EIS).

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c. In Appendix Q of the SD-PEIS, DOE stated that pits to be transferred from Rocky Flats to Pantex "would be packaged in FL containers at RFETS before shipment, and upon receipt at Pantex, would be repackaged into AL-R8 containers in zone 12 South and placed into storage in Zone 4 west pending availability of AT-400A containers and relocation to upgraded facilities in Zone 12 South" (Q-1, 2-53)

d. "After the AT-400A containers are available, the pits would be repackaged into AT-400A containers for either long term storage or transportation to a disposition site." (Q-2, Q.4.)

e. In the Pantex EIS, DOE stated that "it is planned that up to 20,000 pits will eventually be repackaged in AT-400A containers," (Page 4-273), and in the SD-PEIS, DOE stated that 2,000 pits per year would be repackaged in AT-400A's starting in 1997 (SD-PEIS, Q.4).

f. In the SD-PEIS, DOE stated that, " For the disposition alternative, the transportation analysis was based upon the assumption that the storage preferred alternative had been implemented prior to the start of disposition transportation." (Page 4-893)

g. There is no analysis in Appendix Q or elsewhere in the SD-PEIS for repackaging of pits for transportation to a plutonium pit disassembly and conversion facility. DOE did not analyze the foreseeable option of the AT-400A program failing. (See Section III).

h. In 1996, Pantex managers stated "The AT-400A process will allow us to protect excess and strategic pits in storage until final disposition of the material is made."

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C. Background: Proposed Long-Term Storage Plans

DOE is proposing and analyzing plans for long-term storage of plutonium at the Pantex plant outside of the NEPA process.

1. DOE continues to store plutonium pits in AL-R8 containers at Pantex; even though DOE did not, and has not, reported or analyzed in any NEPA documents the real impacts of storing plutonium pits in AL-R8 containers for an "extended storage period."

a. DOE did not report known information abut the AL-R8 during the SD-PEIS or the Pantex EIS. DOE only informed the public in NEPA documents that AL-R8's are not suitable for shipping. DOE did not inform the public that AL-R8's were considered unsuitable for extended storage by the Design labs.

In 1995, a joint Lawrence Livermore National Laboratory (LLNL) and Los Alamos National Laboratory (LANL) memorandum was issued to the Department of Energy's Albuquerque Operations Office as well as Pantex and DOE's Amarillo Area Office. In the letter, the labs recommended for strategic reserve pits:

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· defined "extended storage" as more than five years.

· strongly recommended "that these pits be removed from the AL-R8's as soon as possible because of a potential corrosion problem caused by moisture and chloride in the Celotex."

· "If AL-R8's are used for more than 5 years or greater, humidity control is recommended at 15-20% RH plus an aggressive monitoring program to be established."

· Recommended temperature controls of 70 degrees (+/- 5 degrees) Fahrenheit in "both AL-R8 and AT-400A storage containers, and to all facility configurations."

Storage recommendations for surplus pits were less rigid but did include "we recommend that no pits be stored in AL-R8's."

b. DOE has no defined, approved schedule for repackaging of pits from AL-R8's into suitable storage containers and has not analyzed the impacts of long term storage of pits in AL-R8's. .

c. Estimates for repackaging pits from AL-R8's into a suitable environment range from 15-30 years in the *Conceptual Design Report (CDR) for Building 12-66* (Pages 9, 11) to five years--pending selection during the Pantex presentation to the PPCAB on 3/30/98.

2. DOE has not analyzed under NEPA the effects and cumulative impacts of repackaging of plutonium pits in containers that do not meet the same specifications for long term storage and transportation as the AT-400A, yet DOE is proposing to use the AL-R8 sealed insert for long term storage of plutonium pits and not use the AT-400A container. 1

a. "A mechanical line for repackaging pits into AT-400A containers is expected to be operational in FY 1998 which will provide a combined total repackaging maximum capacity of 960 pits per year...At the present time the plans are to close the manual line when the mechanical line becomes operational which will reduce the repackaging output to less than 60 per month." (Conceptual Design Report, Page 9)

b. "A sealed insert has been developed, and is under review for use in storage of pits in AL-R8 containers." (CDR , Page 9)

c. Discussion of alternative storage containers began as early as July 1997 under the context of the AL-2100 working group. The AL-R8 was developed in 1997 and presented as an option to the public in September 1997.

d. DOE and Pantex presented analysis of storage container options to the Pantex Plant Citizens Advisory Board on March 31, 1998. The AL-R8 sealed insert was identified as a preferable container.

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e. In May, 1998, the DNFSB reported that sealed inserts had been selected for certain pit types, and that the AT-400A Manual Line was discontinuing and was being shutdown.

4. DOE is proposing to not upgrade Building 12-66 in Zone 12 for long term storage of surplus plutonium pits and intends to keep plutonium pits in Zone 12 despite considering this an "unacceptable alternative."

a. In December, 1997, the DNFSB reported that DOE was not moving forward with the upgrade of building 12-66.

b. DOE has not informed the public of this decision

c. Pantex is now evaluating Building 12-66 for a new mission of assembling Radioisotope Thermal Generator Mission.

d. In the Conceptual Design Report (CRD) for Building 12-66, DOE and its contractor determined that there were no other acceptable alternatives for either interim or long-term storage of plutonium pits at Pantex. (Pages 10-12). Zone 4 was considered unacceptable for continued storage because "these magazines are not properly equipped with the cooling systems necessary to ensure the pits are maintained at the required temperatures to preserve surplus pits during long term storage." (Page 10). No buildings other than 12-66 "are available or meet the criteria for providing a long term storage function for surplus pits." (Page 10). 1

e. In the Conceptual Design Report, the SD-PEIS is cited as a justification for not reviewing other DOE sites for long-term storage of surplus plutonium (Page 11).

f. The NEPA documentation for Building 12-66 identified the project as being part of the implementation of the SD-PEIS ROD.

g. DOE reported "reviewing" Zone 4 magazines for excess plutonium to the Pantex Plant Citizens Advisory Board on 3/31/98. There are no known NEPA documents identifying continued storage as implementation of any NEPA ROD's.

5. DOE is conducting an Integrated Pit Storage Program Plan (IPSPP) without public input and without NEPA coverage.

a. The IPSPP was presented to the PPCAB on 3/31/98 in the context of evaluating container options, facility options and modification, the surveillance program, and an implementation plan. The Final Draft was scheduled for release by 5/31/98, but remains unfinished. (DNFSB weekly reports).

b. The IPSPP was identified as a work in process as early as January 1997. DOE told the GAO the Final Draft would be completed by 4/30/98.

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c. The IPSPP was first reported as being scheduled for January 30, 1998 (DNFSB weekly report: 1/16/98). A working draft was released that was described by the GAO as "only a preliminary draft" and "mostly in outline format." (GAO, Page 34).

d. DOE internally presented an Integrated Pit Storage Plan briefing in early March (DNFSB Weekly Report for Pantex 3/6/98)

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e. An IPSPP "Tiger Team" began work in early April 1998 to provide "Pantex input on the DOE-AL IPSPP. Working groups were established to address: [1] packaging; [2] movement, staging, shipping, and receiving; [3] storage; [4] monitoring and surveillance; [5] safeguards/transparency." (DNFSB Weekly Reports for Pantex, 4/3/98, 4/10/98).

Sincerely:

Don Moniak
Program Director
STAND of Amarillo, Inc.

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